RURAL-URBAN DIFFERENCES IN STRESS, COPING STYLES AND BEHAVIOURAL PROBLEMS IN ADOLESCENTS

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Rural-Urban Differences in Stress, Coping Styles and Behavioural Problems in Adolescents

by

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Abstract

Relationships were examined between self-reported stress, coping and behavioural problems in 100 urban and 146 rural adolescents. Due to social and economic characteristics of rural communities, differences were expected to emerge between the two samples. Urban males reported more stress from social conflict and more externalizing problem behaviours than any other group, and relationships between life events and coping were stronger among females. Moderating effects of coping on the relationships between stress and problems were expected; they were tested using hierarchical regression analyses and structural equation modelling. Although stress, coping and problems were highly intercorrelated, the effects of stress on problems were not significantly moderated by coping. The data fit a structural equation model of direct effects of both stress and coping, indicating that stress and coping may have additive but not interactive effects on problems. This result could be due to adolescents' utilization of many coping strategies in response to stress - few of which have any moderating effects, or to a number of methodological and measurement issues. The findings are discussed in the context of adolescent development in rural communities and

implications are presented for parents, educators and health professionals.

Rural-Urban Differences in Stress, Coping Styles and Behavioural Problems in Adolescents

The effects of stress on the emotional adjustment and psychological development of adolescents has been the subject of much investigation and theoretical speculation in recent years. A large body of empirical evidence supports the clinical observation that individuals who have been exposed to undesirable events and difficulties in the recent past are at a significantly higher risk for emotional and behavioural difficulties (Berden, 1990; Goodyer & Altham, 1991; Paykel, 1994). Much of the research on the effects of stress has focussed on variables such as the severity and duration of the stress, and the gender and age of the individuals affected. Less is known about the role of individual differences in cognitive appraisal and coping styles, and how these mechanisms operate in the context of resiliency and emotional distress.

In the research literature on coping and resiliency in children and adolescents, there exists an over-reliance on adult-based paradigms. It is important to differentiate the two areas of research. In studying stress and coping in young people, the assumption that adults' concepts and perceptions of threat, undesirability and other dimensions

of events are the same as those of young people is unfounded (Monck & Dobbs, 1985; Yamamoto, Soloman, & Parsons, 1987). Adolescents and adults do not perceive the same events to be stressful, nor do they attribute the same degree of salience or impact to the same events (Cohen, Burt & Bjorck, 1987; Johnson, 1986; Rende & Plomin, 1991).

The present study examines the validity of an adult-based theory of coping in explaining relationships between stress, coping and behaviour problems in a sample of adolescents. Rural-urban and gender differences are examined in (1) the prevalence of emotional and behavioural symptoms, (2) the number of stressors reported from life events, daily hassles, and social conflict, (3) the relationships between stress and symptoms, and (4) the role of coping in mediating these relationships. The specific hypotheses of the study are outlined below following a review of current research on adolescent stress and coping.

Stress theories. Stress has been conceptualized in several ways (Compas, Howell, Phares & Williams, 1989; White, 1974). Early advocates of life events research described stress as any experience that entailed change or "readjustment" (Holmes & Rahe, 1967). An early definition offered by Hans Selye (1976) is "the nonspecific response of the body to any demand made upon it" (p. 284). The stress literature soon

incorporated cognitive perspectives with a focus on appraisal. For example, Lazarus and his associates (Folkman & Lazarus, 1980; Lazarus & Folkman; 1984) defined psychological stress as a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well being. In their theory, stress is conceptualized as the result of either discrete events of major magnitude or ongoing, chronic aspects of the person-environment relationship.

Stress can therefore refer to (1) an internal state of the organism (sometimes referred to as "strain"); (2) an external event (or "stressor"); or (3) an experience that arises from a transaction between the person and the environment (Aldwin, 1994). These interpretations have led to three types of stress theories - response-oriented, stimulus-oriented, and interactional (Derogatis & Coons, 1993; Lazarus, 1966; 1991; Lazarus & Delongis, 1983).

Response-oriented theories focus on an internal state of the organism, whereby "stress" refers to both physiological and emotional reactions. Studies of physiological reactions to stress focus on the peripheral and central nervous systems, as well as neuroendocrine and immune system function. Studies of emotional reactions to stress focus on such negative feelings as anxiety, anger,

sadness, guilt and shame (e.g., Lazarus, 1991; Solomon, 1980).

Stimulus-oriented theories focus on the external environment. Studies have focussed on major trauma; major life events; noxious environmental characteristics such as noise, overcrowding, or pollution; chronic role strain (e.g., bad marriage, poverty); and daily hassles. Essentially, those aspects of the environment that disorganize or increase demands upon the individual are considered stressors. This perspective suggests that individuals have an innate finite capacity to withstand environmental stressors, and when the cumulative stress experienced is greater than the individual's tolerance, he or she undergoes a deterioration in function - the reaction to stress.

Interactional theories emphasize the role of characteristics of the organism in mediating between the stimulus characteristics of the environment and the responses evoked. Unlike stimulus and response theories, they look to individual differences in cognitive appraisal, responses, and subsequent impact on the environment. Stress arises from transactions between the person and the environment in which there is a mismatch between an individual's resources and the perceived challenge or need. This is the approach taken by Lazarus and his colleagues

(Folkman & Lazarus, 1988; Lazarus, 1966; 1991; Lazarus & Folkman, 1984). In their theory, not only does the individual mediate the impact of environmental stimuli upon responses, but also the perceptual, cognitive, and physiological characteristics of the individual affect and become significant components of the environment.

Sources of Stress

The distinction between stress and distress cannot be overemphasized. Constructing valid measures of stress while avoiding a confound between perceived severity and emotional response is a task that has challenged stress researchers. Although some have criticized a pervasive tendency for self-report measures of distress to be employed as prima facie evidence of stress (e.g., Coyne & Downey, 1991; Derogatis & Coons, 1993), biological markers and third-party assessments (e.g., clinician ratings) fail to evaluate the personal valences that stressors may have for the individual. Because so many prominent stress theories emphasize intrapsychic cognitive processes such as appraisal and coping as being central to the definition of stress, self-reports remain a cardinal method of stress assessment.

Life events. Assessing life events as a stimulus-oriented measure of stress has a long history. The use of life charts to systematically determine the temporal

relationships between life experiences and the onset of psychiatric disorders first appeared in the 1960's and 1970's with the development of life events questionnaires (e.g., Goodyer & Altham, 1991; Holmes & Rahe, 1967; Paykel, 1978). The negative effects of stressful life events on children became more widely recognized with the development of age-appropriate self-report measures. Studies have found that scores reflecting the total number of major negative events reported are predictive of child and adolescent health and mental health problems in both cross-sectional and longitudinal analyses (Rowlinson & Felner, 1988; DuBois, Felner, Brand, Adan, & Evans, 1992; Sandler, Tein, & West, 1994; Siegel & Brown, 1988; Wolchik & Sandler, 1997).

Early life events scales modified for use with children [e.g., the Social Readjustment Rating Questionnaire (Coddington, 1972a; b); and the British Life Events Inventory for Children (Monaghan, Robinson, and Dodge, 1979)] were based on the premise that desirable and undesirable changes have equal impacts on psychological functioning. Johnson (1982; 1986; Johnson and McCutcheon, 1980) argued that it is more appropriate to conceptualize life stress in terms of undesirable events and changes. They also suggested that because the stressfulness of events may vary as a function of cognitive appraisal, the use of mean stress weightings for items derived from raters other

than the children involved may produce misleading results.

To address these limitations, Johnson and McCutcheon (1980) created the Life Events Checklist. For each of its 46 listed events, children report whether the event occurred in the past year, whether they viewed it as desirable or undesirable, and (on a four-point scale) the degree of impact they think it had on their lives. Separate positive and negative life change scores may be derived in addition to a total life change score. Using an adolescent sample, Johnson and McCutcheon (1980) reported negative life change scores to be positively correlated with depression, anxiety, emotional maladjustment, and external locus of control.

Newcomb, Huba and Bentler (1986) shorted the measure to 39 items and found a reliable factor structure of seven interpretable dimensions of stress: Family/Parents, Accident/Illness, Sexuality, Autonomy, Deviance, Relocation, and Distress. They also found that scores from this version, entitled the Life Events Questionnaire (LEQ), correlated with current and later depressive symptoms, anxiety and externalized behavioural problems.

Despite these advancements, the associations found between major life events and psychological maladjustment in adolescents have been inconsistent (Cohen, 1988). Some studies have found a relationship between recent major life events and adjustment (e.g., Newcomb, Huba, & Bentler, 1986;

Sandler & Block, 1979) but others have not (e.g., Cohen, Burt, & Bjorck, 1987; Gersten, Langner, Eisenberg, & Simcha-Fagan, 1977). In reviews by Compas (1987a; b), correlations between self-reports of stressful events and emotional/behavioural problems were in the .20 to .40 range. Cohen, Burt, and Bjork (1987) found that self-reports of negative events accounted for a small (5%) but significant portion of the variance in depression and anxiety reports five months later.

Daily hassles. Today, research on the effects of stressful events on children and adolescents looks at both major life episodes (e.g., parental divorce, moving to a new home) and minor, daily stressors (e.g., homework, chores and responsibilities at home, restrictions by parents). Daily hassles are mundane irritants and sources of stress that people commonly encounter in everyday life (Kanner, Coyne, Schaefer, & Lazarus, 1981). A diverse literature on life events has shown that daily hassles are correlated with major events scores, and correlate with emotional and behavioural disturbances over and above the effects of major events (Compas, 1987b; DuBois et al., 1992; Johnson, 1982; 1986; Rowlinson & Felner, 1988). There is substantial evidence from adult samples that their adverse impact on physical and mental health exceeds that of major life events (Kanner et al., 1981; Miller, 1993). In adolescents, Siegal

and Brown (1988) found daily hassles predicted self-reported depressed mood nine months later in a sample of 10- to 17-year-old girls. Similarly, using the Adolescent Perceived Events Scale (APES), Compas, Phares, Banez, and Howell (1991) found daily hassles to be a stronger predictor of subsequent depression and aggression than major life events after a nine-month lag.

As with major life events, a recurrent issue is the possibility of confounds between measures of hassles and psychological symptoms which may artificially inflate correlations between them (e.g., Dohrenwend, Dohrenwend, Dodson, & Shrout, 1984; Edwards & Cooper, 1988). Because it is difficult to distinguish whether the APES measures stressful events or adverse responses to stress (Dohrenwend et al., 1984), Kohn constructed hassles scales "decontaminated" of negative well-being for adults (Kohn & Macdonald, 1992), college students (Kohn, 1990) and high school students (Kohn & Milrose, 1993). These measures (a) do not use items that reflect physical or mental health or subjective distress, (b) rate hassles items only for degree of exposure, and (c) use scale titles that do not directly imply subjective distress (e.g., "Survey of Recent Life Experiences,", Kohn & Macdonald, 1992; "Inventory of College Students' Recent Life Experiences," Kohn, 1990). Their more recent measure, the Inventory of High School Students'

Recent Life Experiences (IHSSRLE; Kohn & Milrose, 1993) was chosen for the present study.

Similar to the discussion concerning major life events, Lazarus and his associates emphasized the theoretical importance of cognitive appraisal of stress in mediating the impact of hassles on well-being (Lazarus and Folkman, 1984). This was the rationale for severity ratings in the original Hassles Scale (Kanner et al., 1981). Although the approach taken by Kohn and his associates departs from Lazarus's emphasis on appraisal (i.e., by avoiding the use of severity ratings), the result has been three empirically sound measures of hassles for different age groups that are less confounded with respondents' levels of psychological distress. In Kohn and Milrose's (1993) sample of high school students, the IHSSRLE showed adequate internal consistency and validity against a criterion of subjectively appraised stress.

Interpersonal conflict. Interpersonal conflict is described as one of the most significant stressors for adolescents (Daniels & Moos, 1990; Laursen & Collins, 1994). Various definitions of conflict have been offered; e.g., a state of incompatible behaviours (Shantz, 1987), disagreement (Garvey, 1984), or opposition (Hay, 1984) between two or more individuals. Its negative effect on an adolescent's well being typically depends on the intensity

and duration of the conflict, and whether resolution is reached (Laursen & Collins, 1994).

Recurrent conflict has been shown to lead to deterioration of family and peer bonds (Berndt & Keefe, 1992; Patterson, Capaldi, & Bank, 1989). Frequent and intense conflict has been found to be negatively related to parental self-esteem and life satisfaction (Silverberg & Steinberg, 1990), and adolescent attitudes toward parents (Olson et al., 1983). Conflict within families has also been prospectively linked to adolescent delinquency and behaviour disorders (Patterson, Capaldi, & Bank, 1989), and clinically referred families with adolescent children report more frequent and intense disagreements than do nonclinical families (Robin & Foster, 1984). Retrospective research has revealed elevated levels of parent-child conflict among adolescent runaways (Adams, Gullotta, & Clancy, 1985) and suicide attempters (Corder, Shorr, & Corder, 1974). In addition, increases in conflict between friends longitudinally predict detachment from school and lower grades (Berndt & Keefe, 1992). It is clear that conflict has many potential long-term effects on adolescents' psychosocial development.

For parent-child relationships, age related shifts in conflict have been described in terms of an inverted U-shaped function, with rates peaking in early to mid-

adolescence (Paikoff & Brooks-Gunn, 1991; Laursen & Collins, 1994). This trend has been empirically supported by observational (Holmbeck & Hill, 1991) and self-report (Steinberg, 1988) studies and has been attributed to changes in familial dynamics such as adjustment of the parent-child attachment bond and the adolescent's striving to achieve self-identity (Laursen & Collins, 1994).

Cavell and Kelly (1994) argue that it is not conflict per se that is stressful in adolescents, but rather feelings of inadequacy in conflict situations. They developed the Checklist of Adolescent Problem Situations, a self-report instrument designed to assess situational sources of perceived social inadequacy in seven factor-analytically derived domains: parents, siblings, school, forming friendships, maintaining friendships, problem behaviour, and work. Elgar and Arlett (1996) found high correlations between CAPS scores and scores on the Children's Depression Inventory (Kovacs, 1985a; 1992) in a sample of adolescents in grades 7, 9, and 11. Their findings suggested that difficulty in dealing with social conflict may have both an immediate and a long-term relationship with adolescents' well-being (Elgar, 1995).

Self-report inventories of social-cognitive functioning in adolescents have typically been plagued by a number of psychometric weaknesses (e.g., susceptibility to self-report

biases, low internal consistency, low test-retest reliability). This is most common in samples of disturbed youth, who tend to under-report social resources and over-report life stressors and social inadequacies (Cutrona, 1989; Daniels & Moos, 1990). Because the CAPS has demonstrated validity, internal consistency and reliability in two very distinct samples, it is used in the present study as a measure of perceived social inadequacy in conflict situations. Including this aspect of social-cognitive functioning in the present study is significant because it further develops normative data for this relatively new instrument and, more importantly, enables an exploration of what coping strategies are most effective in curbing the effects of conflict on psychological functioning. By using the CAPS, together with the LEQ (Newcomb, Bentler, & Huba, 1986) and the IHSSRLE (Kohn & Milrose, 1993), a broad assessment of adolescent stress may be achieved.

Several models of the relationship between stressful events and adjustment problems have been proposed (Wolchik & Sandler, 1997). Using one such model, researchers study *direct effects* of stress on psychological functioning. Support for this model comes from prospective longitudinal studies in which stress at time 1 was found to be related to

adjustment problems at time 2, controlling for the effects of initial adjustment problems (DuBois et al., 1992; Elgar, 1995; Sandler, Tein, & West, 1994). It should be noted that relatively little is known about the appropriate time lag necessary to assess the effects of stress on mental health problems (Sandler, Wolchik, MacKinnon, Ayres, & Roosa, 1997). Other researchers use models of *indirect effects* of stress on psychological functioning, mediated or moderated by other variables. These variables include both intrinsic psychological processes (e.g., affective-cognitive appraisal) and behaviours (e.g., active coping techniques).

Both direct and indirect models allow for a bidirectional relationship between the person and the environment; stress can lead to adjustment problems and vice versa. For instance, prospective longitudinal studies have found that adjustment problems in children and adolescents at time 1 predict the occurrence of stressors at time 2 (DuBois et al., 1992; Elgar, 1995; Roosa, Beals, Sandler, & Pillow, 1990; Sandler, Tein & West, 1994; Swearingen & Cohen, 1985).

Appraisal and Coping

Cognitive appraisal is the key process in determining whether a coping response occurs following a stressful event. This concept refers to a decision-making process

whereby environmental stimuli are interpreted as either benign or threatening, and the availability of appropriate resources is evaluated (Lazarus & Folkman, 1984). Appraisal has been studied with respect to styles of evaluating stressful events in general (Nolen-Hoeksema, Girgus & Seligman, 1986) and with respect to specific situations (Sandler et al., 1997).

Lazarus (1991) identified three components of appraisal, which correspond to three questions: (1) goal relevance (should I care?), (2) goal congruence (is this positive or negative?), and (3) type of ego-involvement (in what way am I or my goals and commitments involved?). Adolescents' appraisal of the relevance and positivity or negativity of events have been incorporated in rating scales of whether an event is good or bad and the impact of the event (e.g., Life Events Questionnaire; Newcomb et al., 1986).

Coping refers to the responses a person shows "when demands are appraised as taxing or exceeding a persons's resources" but is limited to efforts "which require(s) mobilization and exclude(s) automatized behaviours and thoughts which do not require effort" (Lazarus & Folkman, 1984, pp. 141-142). Recently, there have been attempts to conceptualize and measure coping in children and adolescents and to examine its role in mediating the effects of stress

on the development of symptomatology (Ayres, Sandler, & Twohey, 1998; Ayres, Sandler, West, & Rossa, 1996; Compas, Malcarne, & Fondacaro, 1988). Stone and colleagues (Stone, Helder, & Schneider, 1988; Stone, Kennedy-Moore, Newman, Greenberg, & Neale, 1992) have argued that in its initial stages, research first needs to adopt a "neutral stance" regarding effectiveness of coping efforts.

Several theories of coping have been developed. Murphy and Moriarty (1976) identified two major types of coping in their longitudinal studies of personality development in childhood. They describe *Coping I* as active problem-solving in response to with opportunities, challenges, frustrations and threats in the environment, and *Coping II* as "the capacity to manage one's relation to the environment so as to maintain integrated functioning" (p. 117).

Similarly, Rothbaum, Weisz, and colleagues (Rothbaum, Weisz, & Snyder, 1982; Weisz, Rothbaum, & Blackburn, 1984) emphasize perceptions of control within an attributional framework, and make a distinction between primary and secondary control. *Primary control* is coping aimed at influencing objective conditions or events to reduce punishment or enhance reward. *Secondary control* is coping aimed at maximizing one's goodness of fit with the conditions as they exist, thus reducing punishment and enhancing reward.

From a motivational perspective, Skinner and Wellborn (1994; 1997) define coping as "children's regulation of their behaviour, emotion, and motivational orientation during psychological stress" (Skinner & Wellborn, 1994; p. 107). Stressful events threaten three motivational needs (relatedness, competence, and autonomy) and may come from either the self or the environmental context. In their theory, appraisal of the extent to which the event or context threatens psychological needs determines the perceived severity of stress.

In psychoanalytic models, coping typically refers to ego processes and actions that contribute to adaptive functioning (e.g., Haan, 1977, 1982). This approach excludes thoughts and behaviours that individuals utilize to "cope" but which are not necessarily successful.

Currently, most of the literature on coping in children and adolescents has focussed on the efficacy of either problem-focussed or emotion-focussed coping strategies for alleviating psychological distress (Aldwin, 1994; Compas, 1987a; Compas et al., 1988; Malcarne & Fondacaro, 1988). Much of this work has been guided by Lazarus and Folkman's (1984) interactional-transactional model of coping. Their theory describes two categories of coping strategies. *Problem-focussed* coping strategies are efforts to modify the source of a problem, whereas *emotion-focussed* coping

strategies are efforts to reduce emotional distress. Research indicates the efficacy of any one coping strategy depends on the source of the problem. Problem-focussed coping strategies have been found to be most effective in situations that are perceived to be somewhat controllable, or amenable to change. Emotion-focussed strategies have been found to be most effective in situations perceived to be less controllable (Band & Weisz, 1988; Compas et al., 1988; Lazarus & Folkman, 1984). This may be because continued efforts to change what cannot be "fixed" may ultimately lead to lowered motivation, increased passivity, depression, and helplessness. In these situations, information gathering, an example of problem-focussed coping, may exacerbate emotional distress and interfere with more effective emotional regulatory strategies (e.g., seeking social support).

Lazarus and Folkman's (1984) theory further proposes that stress elicits emotions which serve an organizing function for coping, and in the dynamic interplay between the individual and the environment, emotion thereby affects the environment and subsequent reappraisal of stress. The person-environment transaction changes with each new evaluation, such that coping is determined both by what people initially do and think when confronted with stress and by the changes that occur as a consequence of coping

efforts.

The theory allows for individual specificity in coping responses; people bring combinations of coping strategies to different situations, depending on the context, what has been successful in the past and the perceived controllability of the stressor. Folkman and Lazarus (1980; 1985) provided additional empirical support for their theory when they developed the Ways of Coping Scale - Revised (WOC-R). In this self-report measure, a series of predicates is presented, each portraying a coping thought or action that people sometimes engage in when under stress. Respondents indicate how often they use each of these responses in a given stressful transaction using a Likert-type rating scale. Research using the WOC-R has supported the authors' theory: problem solving or doing something to alter the source of the stress tends to predominate when people feel that something constructive can be done. Conversely, attempting to reduce or manage the emotional distress that is associated with (or cued by) the situation tends to predominate when people feel that the stressor is something that must be endured (Folkman & Lazarus, 1980; 1985; Lazarus & Folkman, 1984).

This binary classification has been criticized as being oversimplistic (Carver, Scheier, & Weintraub, 1989). Problem-solving, for instance, may involve several distinct

activities such as planning, taking direct action, seeking assistance, screening out other activities, and even forcing oneself to wait before acting. Likewise, emotional regulation may involve denial, distraction, or positive reinterpretation. Specific responses may have very different implications for a person's success in coping. Further, Lazarus and Folkman (1984) themselves state that in most situations people first need to regulate emotional distress in order to facilitate problem-focussed coping.

With a comprehensive assessment of adolescent stress, differences may emerge in the efficacy of types of coping strategies (problem-focussed and emotion-focussed) in moderating the effects of stress on psychological functioning. It is possible that major life events may be appraised by adolescents to be less controllable than daily hassles or social conflict situations, thereby being more effectively paired with emotion-focussed coping. Such a relationship would support Lazarus and Folkman's (1984) theory. It is also possible, however, that coping is found to moderate the effects of stress, but not differentially with various forms of stress. Such a finding may be interpreted to suggest that other factors besides appraised controllability are at work in determining the effectiveness of coping strategies (e.g., contextual and individual factors).

Mechanisms of coping effects. There are three possible ways coping may affect behavioural problems. Coping may have a direct effect on problems, have a mediated effect through another variable (e.g., treatment compliance), or may moderate, or "buffer" the effects of some other variable (e.g., stress) on health (Aldwin, 1994; 1987). The present study focuses on the direct effects of coping on problems and on the moderating effects of coping in "buffering" or curbing the effects of stress.

A standard statistical technique for evaluating direct and buffering models is the use of hierarchical regression equations (Aldwin, 1994; Finney, Mitchell, Cronkite, & Moos, 1984). If coping is not found to play a significant role in moderating stress, this does not imply that coping is unrelated to problems. It is possible that both stress and coping have independent, direct relationships with problems which are additive but not interactive. Adolescents who report more problems may report more stress in their lives and the utilization of more coping strategies, but may show no relationship between the stress and coping. In coping assessments such as the self-report measure used in this study, coping strategies which are used in stressful situations are measured - not the coping strategies used in particular stressful situations.

Using structural equation modelling, three models of

adolescent coping were examined for their fit to the data. In the first model (see Figure 1), stress is directly related to problems and coping is omitted, indicating no moderating effects of coping. In the second model, direct effects between stress and problems are omitted, and only indirect effects of stress, moderated by coping, are included (see Figure 2). By comparing the fit of Models 1 and 2 (e.g., in differences in Chi-squared), it can be determined whether a direct relationship between stress and problems is stronger or weaker than an indirect relationship, moderated by coping.

A third model is examined which includes direct relationships between stress and problems, stress and

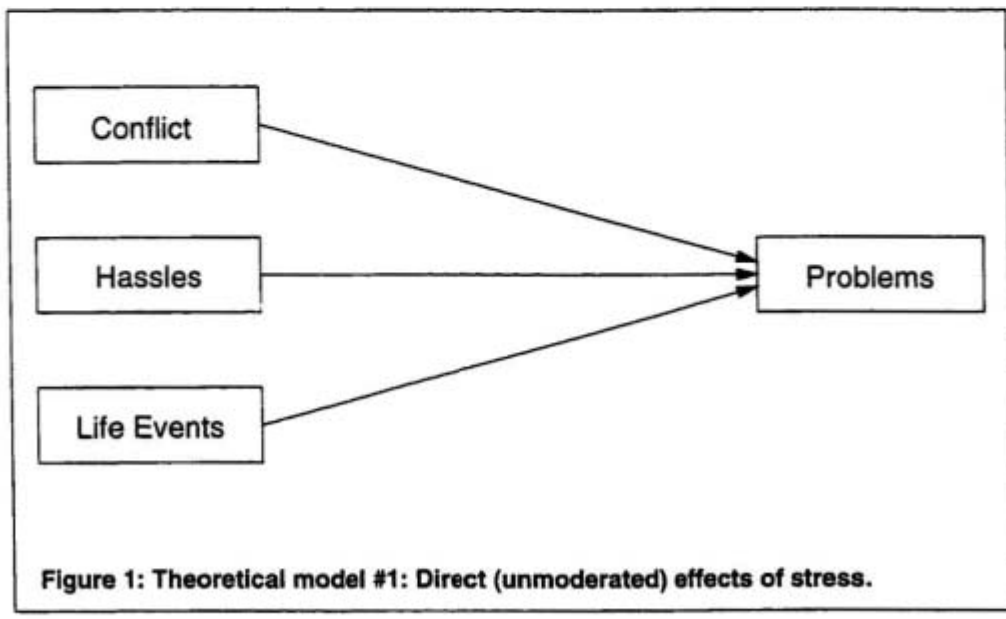

Figure 1: Theoretical model #1: Direct (unmoderated) effects of stress.

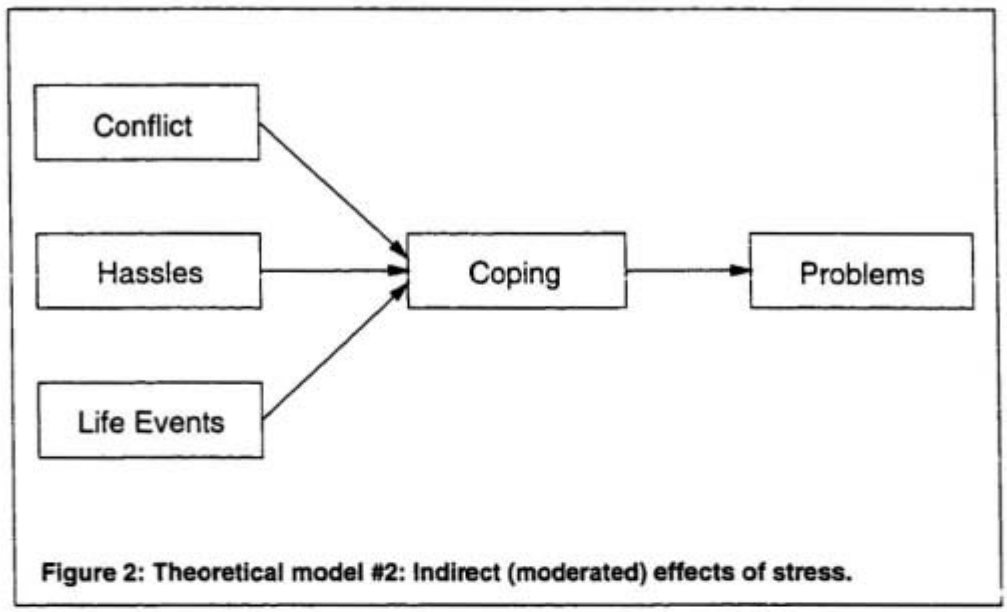

Figure 2: Theoretical model #2: Indirect (moderated) effects of stress.

coping, and coping and problems (see Figure 3). Because it does not allow for interactive effects of stress and coping, Model 3 is an "additive effects" model of stress, coping and problems.

Support for any of these models has meaningful implications for the assessment of coping in adolescents and for the delineation of the complexities of adolescent stress and coping. If sex and rural-urban differences are found to be significant predictors of coping and behaviour problems, separate analyses are in order for each of the three models.

Standardized self-report instruments of stress, coping and emotional and behavioural symptoms were administered to samples of young adolescents. First, the type of stressors (major life events, daily hassles, or interpersonal

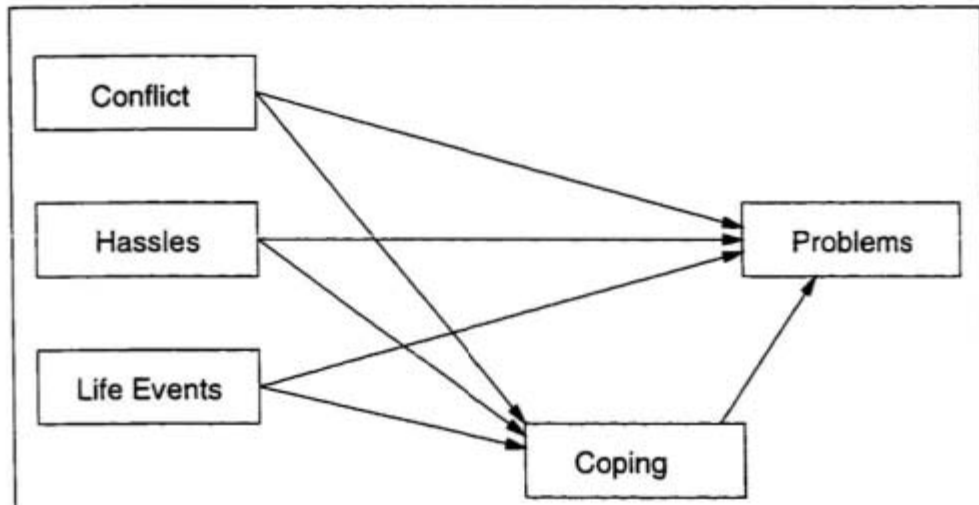

Figure 3: Theoretical direct (additive) effects model of stress, coping and problems.

conflict) which best predicted self-reported internalizing behaviours (e.g., depression, anxiety) and externalizing behaviours (e.g., aggression) was determined. Second, coping was examined with respect to its direct relationship with stress and problems and its moderating function in the stress-problem relationship. Third, the possibility that different coping strategies may more effectively moderate the effects of some types of stress than others was explored. Fourth, the fit of the three theoretical models to the data was analysed using structural equation modelling. A recurring consideration in each of these analyses was the possibility of differences between a rural

and an urban sample of adolescents.

Cross-cultural considerations

To date, little attention has been given to contextual variations in adolescents' coping responses. Researchers have generally assumed that some stimuli, such as interpersonal conflict, are stressful for children regardless of their background (e.g., Emery, 1982; Rutter, 1981; 1995). The taxonomies developed to characterize the strategies used by adolescents to cope with stress may not capture the full complexity of coping efforts without acknowledging the different types of stress adolescents encounter in different subcultural environments (El-Sheikh & Klaczynski, 1993).

Adolescent coping has important social and cultural components. In different contexts, similar stimuli may evoke different responses. As Folkman (1984) noted, successful coping often involves adapting one's skills and knowledge to the context. This "context effect" is especially important to consider when making cross-cultural generalizations. Definitions of successful coping vary between cultures, and problems and social dilemmas are unique to the social environments in which they are embedded. There exists a need for rural-urban and cross-cultural comparisons of adolescent coping, as it has

implications for parents and professionals who work with youth in these areas.

Adolescent functioning in Newfoundland. Adolescents in rural outport communities of Newfoundland are placed under unusual amounts of stress by such factors as high unemployment, the collapse of the northern cod fishery, outmigration, and loneliness (Canadian Mental Health Association [CMHA], 1998; Sinclair, 1992). Compared to young people across Canada, more Newfoundland youth live in poverty (National Council of Welfare, 1998) and they are more pessimistic about their future career goals (Genge, 1996; Sharpe & White, 1993). Academically, Newfoundland youth perform below national averages in most subject areas (Government of Newfoundland and Labrador, 1997) and are also less likely to complete high school (Government of Newfoundland and Labrador, 1998).

In 1998, the unemployment rate in the province was 16.8% - 27.1% among young people. These figures are about twice the national average for Canada (CMHA, 1998). With the decline of the northern cod fishery in the early 1990's, opportunities for young people to find casual work and summer jobs declined. In rural outport communities, the demand for babysitters, crew members, casual plant workers, clerks and labourers was significantly reduced.

The 1990's was also a time of high outmigration for the

province of Newfoundland. With a total population of 563,000 in 1997, interprovincial net migration jumped from -711 in 1991 to -9,285 in 1996 (Government of Newfoundland and Labrador, 1998). The majority of those who left the province were families from rural communities, where losses were as high as one-fifth to one-third (CHMA, 1998). Outmigration has significant implications for the potential for cohesive and stable social support networks of peers, extended family members, and community groups to buffer the psychological impact of stress for rural adolescents. Having smaller, and in some cases, deteriorating social support networks constrain one's ability to seek social support as a coping mechanism. Gien and Solberg (1997) reported that people in rural communities on the Bonavista Peninsula who reported less support from their community showed stronger relationships between stress from the closure of the fishery and problems such as boredom, anxiety, uncertainty and substance abuse. Adolescents in rural areas experience more loneliness than their urban counterparts (Jurich, Collins, & Griffin, 1993; O'Grady, 1996). Obviously exacerbated by outmigration, loneliness in itself is a significant stressor that compromises psychological well-being (Leeflang, 1992; Weiss, 1980; Woodward, 1990).

In addition to outmigration, poverty and unemployment,

there are other factors that differentiate rural and urban adolescents. Rural adolescents have been found to be more family-oriented than urban adolescents (Esterman & Delva, 1995), and to have smaller peer groups (Woodward, 1990), which may limit their ability to avoid the people with whom they have conflicts. Because of this high cohesiveness of rural families and peer groups, conflict-related stress was expected be more closely associated with coping and problems among rural adolescents. The psychological effects of quarrels within families and peer groups was expected to be more significant among rural adolescents, even though they would be less frequent. Although rural adolescents were expected to show a stronger relationship between social stress and psychological symptoms, urban adolescents are expected to report higher levels of social stress.

Very little research has been conducted on how daily stressors change in the context of greater sociological forces such as outmigration and high unemployment. The unique stressors, familial dynamics and community networks of rural Newfoundland provide an opportunity for a social-psychological examination of the relationships among such factors as stress, coping styles and behavioural problems.

Hypotheses

There have been few empirical tests of existing models

of cognitive appraisal and coping styles in the stress-psychopathology relationship - especially in children and adolescents (Spaccarelli, 1994). Self-reports of stress, coping and problems were collected from a rural sample and an urban sample of adolescents from the general population. This provided a more accurate picture of how these constructs are related in adolescents showing a range of mild to severe problems, rather than just those within the clinical range.

The stress instruments measured major life events (LEQ; Newcomb et al., 1986), daily hassles (IHSSRLE; Kohn & Milrose, 1993), and feelings of social inadequacy in social conflict situations (CAPS; Cavell & Kelly, 1994). The coping measure was a modified version of the WOC-R (Folkman & Lazarus, 1985), and the instrument used as a global measure of behavioural and emotional disturbances was the Youth Self-Report (YSR) version of the Child Behavior Checklist (Achenbach, 1991).

The YSR measures psychological disturbances in two broad categories - internalizing problems (e.g., anxiety, depression) and externalizing problems (e.g., hyperactivity, aggression). Female adolescents were expected to score higher than males on the internalizing factor and lower than boys on the externalizing factor. These predictions were based on previous research (Achenbach, 1987; Gjerde, Block,

& Block, 1988). Generally, the prevalence and types of behavioural problems are about equal in prepurbatal girls and boys, but in adolescence girls typically report more internalized symptoms and boys report more externalized symptoms (Achenbach, 1987; 1991; Angold, Weissman, John, Wickramaratne, & Prusoff, 1991; Avison & McAlpine, 1992; Baron & Campbell, 1993; Nolen-Hoeksema, 1990; Weiss & Weisz, 1988).

Due to more cohesive social support networks in rural communities, it was predicted that rural adolescents show stronger relationships between conflict, coping and behavioural problems than urban adolescents. However, since there are both less supervision and more opportunity to become involved in deviant peer groups for urban adolescents, it was predicted that they would report more stress from social conflict than rural adolescents.

Direct relationships were expected between responses on each of the three stress measures and self-reported emotional and behavioural problems. Coping strategies, however, were expected mediate this relationship. This was tested using correlational, hierarchical regression and path analytic statistical methods.

Items on the WOC-R load on two broad factors - avoidance coping and approach coping (Folkman & Lazarus, 1985). Items in the approach coping factor divide further

onto three problem-focussed factors and three emotion-focussed factors. The use of problem-focussed and emotion-focussed coping with stress has been shown to be associated with lower levels of maladjustment in children (Compas et al., 1988; 1989). Conversely, the failure to use this type of coping appears to be related to increased behavioural and emotional problems (Davila, Hammen, Burge, Paley, & Daley, 1995; Rutter, 1995). The moderating effects of different coping strategies were also evaluated with different categories of stress. Because major life events may be considered less controllable than social problem situations or daily hassles, it was expected to be more closely related to emotion-focussed coping. Conversely, problem-focussed coping is expected to be more closely related to life events.

Three path models were developed and tested, each representing a distinct set of relationships between stress, coping and problems. This was not an attempt to construct an all-inclusive etiological model of behavioural problems; rather, the goal was to clarify the relationships between stress, coping styles and behavioural problems in a non-clinical sample of adolescents.

Method

Participants

Two hundred and forty-six adolescents from one junior high school in an urban area of Newfoundland and four smaller all-grade schools in four rural coastal communities participated in the study. Of the 246 participants, at least 38.62% were male and 41.06% was female; gender data were missing on 20.33% of the sample.

Two rural participants and one urban participant were accompanied by teaching assistants during the assessment; they helped these participants understand and respond to the items on the instruments.

Instruments

Life Events Questionnaire (LEQ; Newcomb et al., 1986). The LEQ assesses stress from life events using a combination of a desirability score and a weighting component which takes into account the relevance of the event to the respondent. It lists 39 activities or experiences in six domains: parents and family, school, personal health and appearance, interpersonal relations, independence and freedom, and family encounters with the law (e.g., "Parents divorced"). Respondents were asked to do three tasks for each event. First, they rated each item on a 5-point Likert-type rating scale in regard to how happy or unhappy

it would make them feel if it happened. Second, they indicated dichotomously whether or not the event had happened to them within the past year. Third, they indicated whether or not they had experienced the event more than one year ago. Responses to the first question are used to categorize events in three groups: negative events are those scored "1" or "2," neutral events are those scored "3" and positive events are those scored "4" or "5." Events are not included if the participant indicates it has never happened to him or her. Newcomb et al. (1986) found small but significant correlations between negative event scores on the LEQ and various psychological symptoms (e.g., depression, $\underline{r}$ = .21; insomnia, $\underline{r}$ = .12; illness sensitivity, $\underline{r}$ = 14; thought disorganization, $\underline{r}$ = .17).

Checklist of Adolescent Problem Situations (CAPS; Cavell & Kelly, 1994). The CAPS contains 75 items designed to assess situational sources of perceived social inadequacy in seven factor-analytically derived domains: parents, siblings, school, forming friendships, maintaining friendships, problem behaviour, and work. Each item presents a situation (e.g., "You want your parents to take you somewhere. They say they are too busy to take you"), and asks the respondent how often this happens and how difficult it is. Responses are on two 5-point Likert-type scales. The CAPS has been found to be internally consistent and

reliable, producing test-retest coefficients of .84 over two weeks (Cavell & Kelly, 1994) and .72 over 14 weeks (Elgar & Arlett, 1996). In a sample of adolescents in grades 7, 9, and 11, Cavell and Kelly (1994) found adolescents rated unpopular by peers and teachers scored higher than popular adolescents. They also found a relationship between CAPS scores and self-reports of conflict with parents on the Conflict Behavior Questionnaire (Prinz, Foster, Kent, & O'Leary, 1979). Elgar (1995) found CAPS scores in the same age groups to correlate positively with scores on the Children's Depression Inventory (Kovacs, 1985a, 1992), r = .46.

Inventory of High-School Student's Recent Life Experiences (IHSSRLE; Kohn & Milrose, 1993). The IHSSRLE was designed to measure daily hassles in adolescents and to be less contaminated by subjective distress than other measures such as Kanner et al.'s (1981) Hassles Scale. In the IHSSRLE, respondents are presented with 41 common hassles (e.g., "Being let down or disappointed by friends;" "Disagreements with teachers"). For each situation, they are asked to indicate how much it has been a part of their life during the past month on a four-point scale - from (1) "not at all a part of my life" to (4) "very much a part of my life."

The IHSSRLE has been cross-validated with the Perceived

Stress Scale (Cohen, Kamarack & Mermelstein, 1983) with correlations between .63 and .68, and has high internal reliability with alpha reliabilities for male and female adolescents of .91 and .88 respectively (Kohn & Milrose, 1993). Factor analysis of the measure yielded eight factors: Social Alienation, Excessive Demands, Romantic Concerns, Decisions about Personal Future, Loneliness and Unpopularity, Assorted Annoyances and Concerns, Social Mistreatment, and Academic Challenge. Kohn and Milrose (1993) found higher overall scores in girls on six of these factors.

Ways of Coping Scale - Revised (WOC-R; Folkman & Lazarus, 1988). The WOC-R is a 66-item questionnaire listing a wide range of thoughts and acts that people use to deal with the internal and/or external demands of specific stressful encounters. It is based on the cognitive-transactional theory of coping developed by Lazarus and associates (Lazarus, 1966; Lazarus & Folkman, 1984) and is one of the most widely used self-report inventories of coping. Usually, the encounter is described by the respondent in an interview or in a brief written description saying who was involved, where it took place, and what happened. The instructions on the WOC-R were modified in the present study to allow for comparisons with a broader assessment of stress. The original instructions read:

> Please read each item and indicate, by circling the appropriate category, to what extent you used them in the situation you have just described.

This was changed to:

> Please read each item and indicate, by circling the appropriate category, to what extent you used them *in situations and events you found stressful*.

Similar modifications have been done in past studies (e.g., Chan, 1995; Horowitz, Boardman, & Redlener, 1994; Kuther & Fisher, 1998).

The WOC-R differs from the original Ways of Coping Checklist (Folkman & Lazarus, 1980) in two significant ways. Its response format was modified from a binary choice (Yes/No) to a 4-point Likert scale (0 = does not apply and/or not used; 3 = used a great deal). Also, redundant and unclear items were deleted or reworded, and several items, such as prayer, were added. Folkman and Lazarus (1985) factor analytically derived eight factors. Six assess approach coping - three problem-focussed factors (problem solving, confrontation, and accepting responsibility) and three emotion-focussed factors (positive reappraisal, self-control, and seeking support). The

remaining two factors describe avoidance coping (distancing and escape-avoidance). Folkman and her associates (Folkman & Lazarus, 1988; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986) identified associations between the appraisal of the stressor and the choice of coping responses. When faced with a threat to self-esteem, for example, people tend to use more emotion-focussed techniques, and when people appraise situations as changeable, they tend to rely more on problem-focussed coping.

The WOC-R has been used with adult and adolescent samples with adequate internal consistency. Samples of adults have yielded Chronbach alphas ranging from .61 to .79 on each of its subscales (Folkman & Lazarus, 1988). With modifications to the WOC-R, it is important to note that internal consistency may vary. In a sample of middle and older adolescents (16 to 18 years of age), Puskar and Lamb (1994) reported an average Cronbach's alpha of .80 across the eight subscales. In a sample of younger adolescents (12 to 14 years of age), Kuther and Fisher (1998) found alphas ranging from .60 to .73, and Chan (1995) reported alphas in the .50 to .78 range in a sample of Chinese adolescents.

Child Behavior Checklist - Youth Self-Report Form (YSR; Achenbach, 1991). The YSR is designed to assess in a standardized format the social competencies and behaviour

problems of children and adolescents. The YSR is the self-report version used with adolescents aged 11 to 18. It is the dominant self-report assessment tool used in clinical and community settings, and has accumulated a wealth of normative data. Respondents are asked about their competencies on 17 items and about their problems on 103 items. Only the problem items were used in the present study.

YSR raw scores must be converted to t scores in order to pool male and female data. Although raw scores reflect greater differentiation among nondeviant subjects than t scores, item loadings onto the subscales and two main factors (internalizing problems and externalizing problems) are different for males and females (Achenbach, 1991).

Problem scores have factor-analytically derived subscales: internalizing problems (e.g., anxiety, depression), and externalizing problems (e.g., aggression, conduct disorder, hyperactivity). The YSR has proved highly effective in identifying adolescents' antisocial behaviour (Hendrin, 1991), anxiety disorder and depressed mood (Worchel, Hughes, Hall, & Stanton, 1990). The CBCL is highly reliable over time and across assessment settings (Achenbach, 1987; 1991), and is considered one of the best assessment tools available for quick assessments of all aspects of adolescents' functioning (Nolen-Hoeksema, 1998).

On the YSR, only the syndrome and total problem scores were used - the competency section was omitted during the assessment.

Procedure

Written consent to conduct this research was granted from the one school board and five school principals involved. Family consent forms and cover letters (see Appendix A) were then distributed to 482 students in the selected schools - 250 distributed in equal proportions to students in grades 7, 8 and 9 in the urban school and 232 to all students in grades 7, 8 and 9 in the four rural schools. The cover letter (1) described the purpose of the research, (2) outlined the measures and procedure to be used, (3) discussed participants' freedom to drop out from the study at any time, (4) stated that all data collected would be anonymous and kept strictly confidential, and (5) explained that participants could choose to drop out of the study at any time. The letter also explained that any reports of results from the study would include group data only and not individual results. The consent forms requested signatures from both the potential participant and a parent or guardian.

Consent rates were 40.0% for the urban school and 62.9% for the rural schools, resulting in 100 urban

participants and 146 rural participants. All instruments were completed in classroom settings during two class periods (approximately 90-100 minutes). To control for possible transfer effects between measures, all five instruments for each participant were placed in a random order in an envelope with the aid of a computer program that generated random permutations of five. The measures for each participant were identified with a code number to permit comparisons between them without the use of participants' names.

Prior to assessment, the investigator reviewed the points that were discussed in the cover letter of the consent form pertaining to the anonymity and confidentiality of the data, and the fact that participants could drop out of the study at any time. Participants were instructed to read the instructions on each instrument carefully before starting each one and to complete them in the order in which they were placed in their envelopes. Upon completing all five instruments, participants placed them back in their envelopes and left the testing area. There were missing data due to some participants not finishing the instruments in the allotted time. Unfortunately, many participants did not have time to complete all five measures, and because only one of the five measures asked participants to indicate their sex, this also resulted in lost sex data.

Due to issues of confidentiality and anonymity, participants who scored high on these measures did not receive special support after their data was collected. However, after the measures were collected, the investigator debriefed each class by discussing the purpose of the research and identifying sources of support in their community for young people experiencing difficulty coping with stress. Participants were not paid.

Results

Reliability of the WOC-R

Because the WOC-R was the only measure modified for this study, its internal consistency was examined. Chronbach's alpha for total WOC-R scores was 0.94. For Approach Coping the alpha was .90 and for Avoidance Coping the alpha was .79. Within the Approach Coping factor, the mean alpha for each of the six subscales was .63 which is similar to that found in previous research that used the WOC-R with adolescents (Chan, 1995; Kuther & Fisher, 1998). Chronbach's alphas for each factor was .69 (Confrontation), .60 (Self-control), .63 (Seek Support), .48 (Accept Responsibility), .71 (Problem Solving) and .68 (Positive Reappraisal). Chronbach's alphas for the two Avoidance Coping subscales were .65 (Distancing) and .71 (Escape-avoidance). The internal consistency of the WOC-R in the present study was therefore low but similar to past research, indicating that some of its variance was reliable (or systematic) variance. The internal consistency among the items of the WOC-R was not affected by the modification made to its instructions.

Individual measures

Means and standard deviations for male, female and total participants for each measure are displayed in Table 1

(rural sample), Table 2 (urban sample), and Table 3 (pooled sample).

Two-way ANOVAs on each of the five measures revealed no significant main effects of sex or community size. However, interactive effects of sex and community size were found on the CAPS and YSR. Two-way interactions were found on five of the seven CAPS factors (Parents, Siblings, School, Problem Behaviour, and Work; see Figure 4), Fs (3, 160) = 6.89, 5.15, 10.23, 6.49, 8.03, respectively, all ps < .05. Simple effects analyses determined urban males scored higher than urban females on each of these subscales, Fs (1, 66) = 7.72, 8.99, 20.83, 11.90, 26.78, respectively, all ps < .05. There were no sex differences found in these CAPS factor scores in the rural sample.

There was also a significant interaction in overall CAPS scores, F (3, 160) = 7.58, p < .01. Similarly, urban males scored higher than urban females, F (1, 66) = 15.22, p < .01, although rural males did not differ significantly from rural females.

Although the main effects of sex and community size

Table 1

Means and Standard Deviations from the Rural Sample

	Males		Females		Total	
	M	*SD*	*M*	*SD*	*M*	*SD*
CAPS						
Parents	5.69	3.81	6.70	5.20	6.38	4.20
Siblings	5.33	3.31	5.60	3.67	5.61	3.38
School	5.36	4.59	4.41	2.67	4.97	3.40
Make Friends	5.11	3.51	4.60	3.79	4.67	3.26
Keep Friends	4.87	3.41	5.62	3.75	5.30	3.21
Problem Behaviour	3.34	2.57	3.53	2.38	3.45	2.25
Work	2.75	2.01	2.18	1.54	2.75	2.15
TOTAL	4.65	2.94	4.74	2.60	4.75	2.49
IHSSRLE	78.05	18.65	77.79	17.52	80.89	18.71
LEQ						
Positive Events	4.94	2.65	5.17	2.67	5.28	2.68
Neutral Events	2.65	2.29	2.49	2.23	2.52	2.37
Negative Events	4.18	2.35	4.94	2.65	4.79	2.61
WOC-R						
Confrontation	6.91	3.63	6.46	3.46	7.11	3.37
Self-Control	8.70	3.21	8.48	4.02	8.81	3.47
Seek Support	5.95	3.06	7.28	3.54	6.87	3.30
Accept Respons.	4.84	2.12	5.26	2.46	5.12	2.13
Planful Prob-Solv.	7.27	3.32	6.70	3.58	7.27	3.27
Positive Reapp.	7.38	3.60	8.17	4.18	8.27	3.67
PROBLEM-FOCUSSED	19.02	7.29	18.41	7.71	19.50	7.17
EMOTION-FOCUSSED	22.05	8.37	23.93	9.87	23.96	8.70
APPROACH COPING	41.07	14.95	42.35	16.80	43.45	15.08
Distancing	7.93	3.41	7.35	3.05	7.93	3.17
Escape-Avoidance	8.39	4.17	8.65	4.69	9.23	4.40
AVOIDANCE COPING	16.31	6.69	16.00	6.88	17.16	6.53
TOTAL	74.00	28.08	76.69	30.23	79.83	27.73
YSR						
Internalizing	54.80	10.72	54.92	10.41	54.88	10.51
Externalizing	51.74	10.73	53.27	10.21	52.49	10.45
TOTAL	54.48	11.18	54.67	9.69	54.58	10.42

Table 2

Means and Standard Deviations from the Urban Sample

	Males		Females		Total	
	M	*SD*	*M*	*SD*	*M*	*SD*
CAPS						
Parents	8.87	4.61	6.26	3.81	7.30	4.46
Siblings	8.36	4.16	5.90	4.03	6.85	4.20
School	8.59	4.15	5.04	3.08	6.47	4.03
Make Friends	7.25	4.51	4.90	3.34	5.81	4.08
Keep Friends	7.31	4.03	6.10	3.00	6.48	3.57
Problem Behaviour	5.92	4.14	3.65	2.92	4.60	3.64
Work	5.66	3.83	2.86	2.00	4.05	3.25
TOTAL	7.51	3.59	5.08	2.48	6.03	3.29
IHSSRLE	85.24	21.09	82.19	17.86	83.77	18.71
LEQ						
Positive Events	6.85	4.73	5.78	2.72	6.26	3.75
Neutral Events	3.15	3.30	3.71	4.30	3.47	3.91
Negative Events	4.81	5.03	4.93	2.79	4.84	3.90
WOC-R						
Confrontation	7.84	3.82	7.52	3.57	7.57	3.60
Self-Control	8.31	3.90	9.30	3.39	8.80	3.56
Seek Support	5.41	3.38	6.77	2.89	6.12	3.13
Accept Respons.	4.31	2.88	5.15	2.05	4.68	2.44
Planful Prob-Solv.	6.95	4.03	7.75	3.14	7.32	3.49
Positive Reapp.	7.87	4.08	9.91	3.74	8.89	3.96
PROBLEM-FOCUSSED	19.10	9.14	20.42	7.25	19.57	7.99
EMOTION-FOCUSSED	21.59	9.66	25.98	8.11	23.80	8.91
APPROACH COPING	40.69	18.16	46.40	14.51	43.36	16.13
Distancing	7.05	3.87	7.95	3.36	7.47	3.53
Escape-Avoidance	8.51	5.07	9.47	4.09	9.01	4.45
AVOIDANCE COPING	15.56	8.24	17.49	6.68	16.51	7.27
TOTAL	75.41	31.71	86.83	25.26	80.79	28.35
YSR						
Internalizing	57.07	13.55	57.63	9.88	57.38	11.62
Externalizing	60.16	12.70	52.69	10.61	56.07	12.13
TOTAL	60.86	12.94	56.75	9.74	58.61	11.42

Table 3

Means and Standard Deviations from the Pooled Data

	Males		Females		Total	
	M	*SD*	*M*	*SD*	*M*	*SD*
CAPS						
Parents	7.38	4.51	6.46	4.48	6.79	4.33
Siblings	6.95	4.06	5.77	3.85	6.16	3.80
School	7.08	4.63	4.75	2.90	5.63	3.75
Make Friends	6.25	4.19	4.76	3.54	5.17	3.68
Keep Friends	6.17	3.92	5.88	3.36	5.82	3.42
Problem Behaviour	4.71	3.70	3.60	2.67	3.90	3.00
Work	4.30	3.42	2.55	1.82	3.32	2.75
TOTAL	6.17	3.58	4.92	2.53	5.32	2.93
IHSSRLE	81.44	20.72	80.13	17.74	82.06	18.87
LEQ						
Positive Events	5.81	3.84	5.48	2.70	5.68	3.18
Neutral Events	2.88	2.79	3.11	3.48	2.90	3.11
Negative Events	4.47	3.80	4.94	2.71	4.71	3.28
WOC-R						
Confrontation	7.35	3.73	7.00	3.54	7.30	3.47
Self-Control	8.52	3.54	8.89	3.72	8.81	3.50
Seek Support	5.70	3.20	7.02	3.22	6.57	3.25
Accept Respons.	4.59	2.50	5.20	2.25	4.94	2.27
Planful Prob-Sol.	7.12	3.65	7.23	3.39	7.29	3.35
Positive Reapp.	7.61	3.82	9.05	4.04	8.52	3.79
PROBLEM-FOCUSSED	19.06	8.16	19.44	7.51	19.52	7.50
EMOTION-FOCUSSED	21.83	8.95	24.97	9.04	23.89	8.77
APPROACH COPING	40.89	16.43	44.39	15.74	43.42	15.48
Distancing	7.51	3.63	7.66	3.20	7.74	3.32
Escape-Avoidance	8.45	4.59	9.06	4.39	9.14	4.41
AVOIDANCE COPING	15.96	7.42	16.75	6.78	16.90	6.83
TOTAL	74.65	29.65	81.71	28.20	80.22	27.92
YSR						
Internalizing	55.87	12.09	56.32	10.18	56.10	11.11
Externalizing	55.63	12.36	52.97	10.37	54.25	11.42
TOTAL	57.43	12.38	55.74	9.72	56.55	11.08

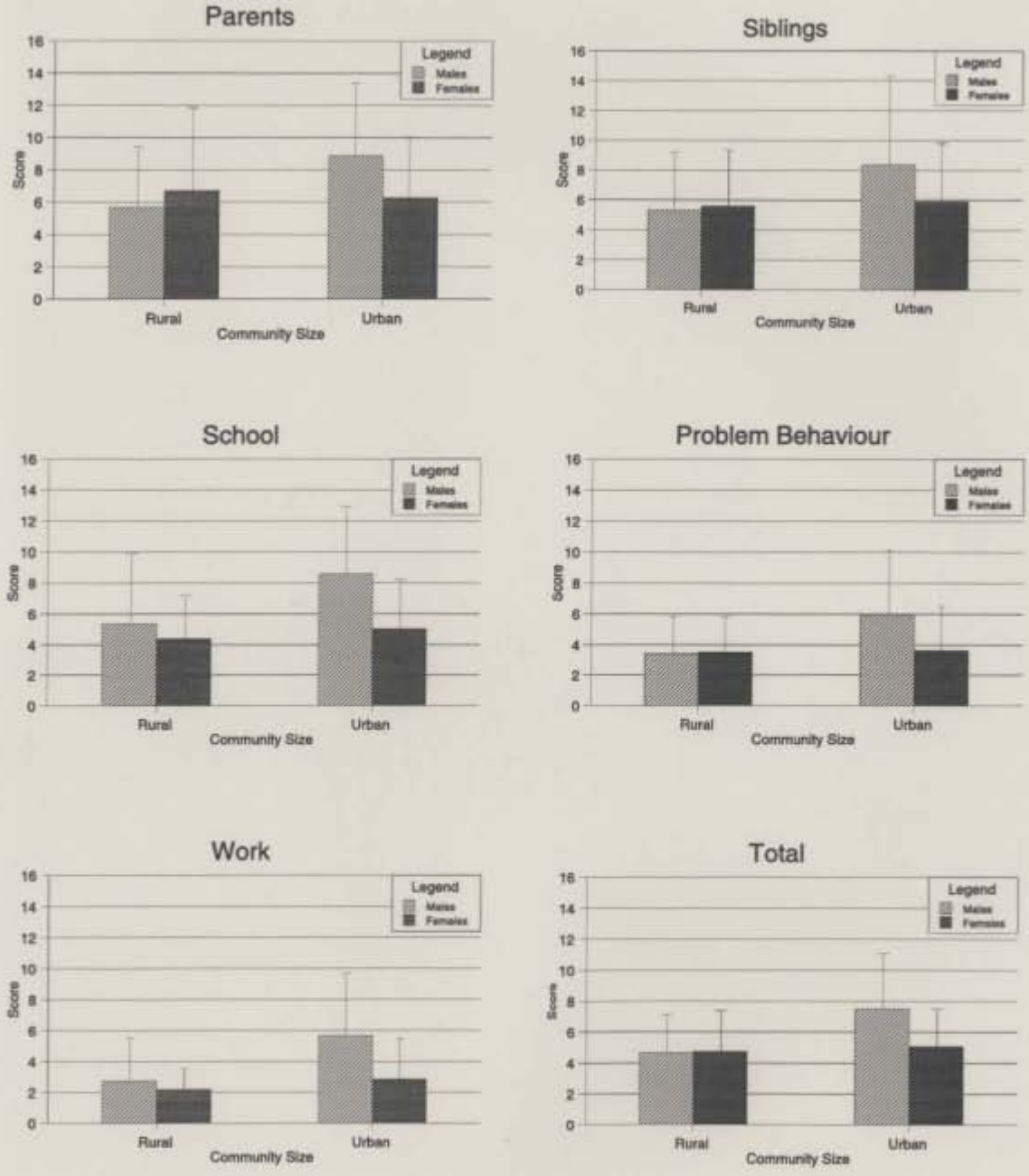

Figure 4: Scores on five CAPS subscales and total CAPS scores for males and females from rural and urban samples.

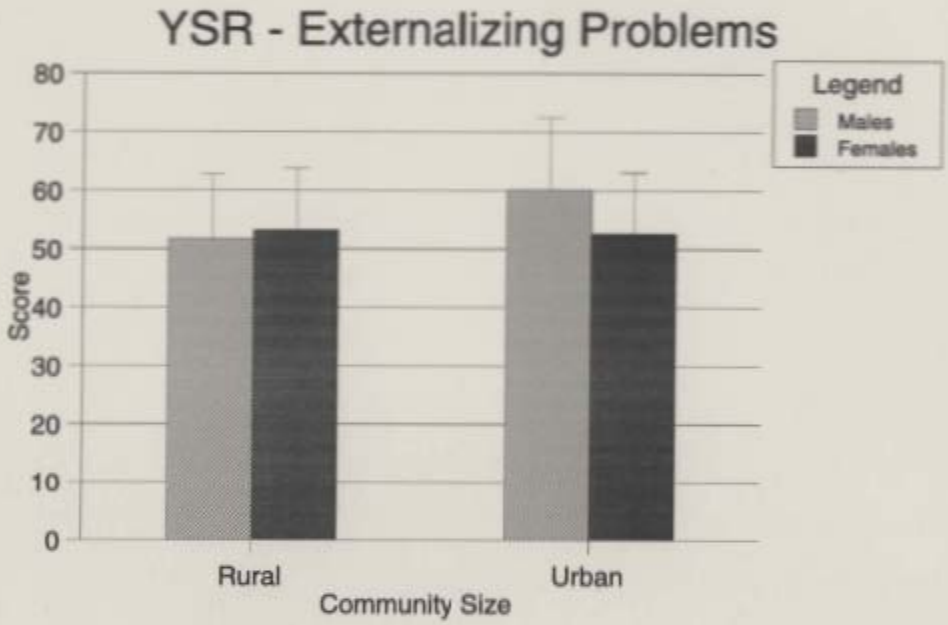

Figure 5. Externalizing problem scores on the YSR for males and females from rural and urban samples.

were not significant in YSR scores, an interaction was found between sex and community size in externalizing problems on the YSR[1], F (1, 190) = 8.01, $p < .01$ (see Figure 5). Simple effects analyses revealed that urban males scored higher than urban females in externalizing problems, F (1, 190) = 18.23, $p < .01$, but rural males and rural females did not differ significantly.

On the WOC-R, females scored higher than males on two emotion-focussed subscales (Seek Support and Positive Reappraisal), Fs (1, 173) = 7.67 and 5.63, respectively, both ps < .05. No other sex differences were detected on the WOC-R or any other measure.

Urban adolescents reported more life events and hassles than rural adolescents. On the LEQ, urban adolescents scored more positive events, F (1, 182) = 70.81, $p < .05$, and slightly more neutral events than rural adolescents, F (1, 182) = 35.24, $p < .06$. However, there was no difference between samples in the number of reported negative events on the LEQ. Urban adolescents also scored higher than their rural counterparts on the IHSSRLE, although this difference did not reach statistical significance, F (1, 158) = 3.55, p = .06. Urban adolescents also scored higher than rural adolescents on one emotion-focussed subscale of the WOC-R - Positive Reappraisal, F (1, 172) = 3.82, $p < .05$.

Relationships between measures

Stress and problems. Correlations between measures for rural, urban, and pooled samples are shown in Tables 4, 5 and 6 respectively. Positive correlations were found in each sample between each stress measure (CAPS, IHSSRLE, and LEQ) and YSR scores, indicating stress is directly related to emotional and behavioural disturbances.

Relationships between LEQ scores and YSR scores varied between samples, types of events and types of problems. In consideration of the low scores and high variability in LEQ scores, these inconsistencies may be due to floor effects. Among rural females, none of the three LEQ scores correlated significantly with internalizing problems, while negative and positive events correlated with externalizing problems. Among rural males, all correlations between scores on the CAPS, IHSSRLE and LEQ (negative and neutral events) and internalizing, externalizing and total problem scores on the YSR were positive and significant, except between positive events and internalizing problems (see Table 4). Life events were associated with internalizing problems among urban adolescents, but not among rural adolescents.

Among urban adolescents, scores on the CAPS, IHSSRLE and LEQ (negative events) correlated with all problem scores

Table 4.

Correlations between measures (Rural Sample).

Males above the diagonal; females below:

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. CAPS	-	.78**	.51**	.18	.33	.54**	.66**	.63**	.60**	.45**	.51**	.53**	.55**
2. IHSSRLE	.67**	-	.54**	.27	.40*	.57**	.61**	.61**	.62**	.47**	.69**	.70**	.76**
3 LEQ(Neg)	.46**	.47**	-	.23	.22	.30	.46**	.27	.36**	.23	.44**	.35*	.59**
4. LEQ(Neu)	.17	.26	.02	-	.02	.09	.23	.06	.07	.11	.30*	.36*	.36*
5. LEQ(Pos)	.19	.28	.07	-.03	-	.43**	.21	.32*	.43**	.39*	.26	.33*	.29*
6. WOC(Appr)	.35*	.49**	.34*	.14	.51**	-	.73**	.97**	.95**	.96**	.30	.42**	.37*
7. WOC(Avoid)	.53**	.69**	.43**	.25	.28	.74**	-	.85**	.77**	.63**	.43**	.66**	.60**
8. WOC(Total)	.41**	.60**	.36*	.21	.39*	.97**	.85**	-	.95**	.91**	.25	.43**	.32*
9. WOC(Prob-Foc)	.27	.48**	.35*	.20	.61**	.94**	.70**	.92**	-	.82**	.38**	.55**	.49**
10.WOC(Emo-Foc)	.39*	.47**	.31*	.08	.39**	.96**	.71**	.93**	.82**	-	.22	.28	.24
11.YSR(Int)	.57**	.77**	.27	.26	.22	.40	.63**	.45**	.34*	.41**	-	.61**	.89**
12.YSR(Ext)	.55**	.63**	.31*	.25	.54**	.52**	.59**	.58**	.56**	.56**	.55**	-	.82**
13.YSR(Total)	.66**	.80**	.30*	.31*	.37*	.37*	.69**	.55**	.45**	.45**	.92**	.79**	-

Pooled:

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. CAPS	-												
2. IHSSRLE	.60**	-											
3 LEQ(Neg)	.39**	.43**	-										
4. LEQ(Neu)	.23*	.23*	.06	-									
5. LEQ(Pos)	.21*	.26**	.22**	-.10	-								
6. WOC(Appr)	.38**	.43**	.27**	.13	.43**	-							
7. WOC(Avoid)	.49**	.59**	.34**	.14	.25**	.69**	-						
8. WOC(Total)	.44**	.52**	.28**	.11	.36**	.97**	.82**	-					
9. WOC(Prob-Foc)	.39**	.43**	.27**	.17	.45**	.94**	.67**	.92**	-				
10.WOC(Emo-Foc)	.33**	.40**	.25**	.09	.37**	.96**	.64**	.92**	.80**	-			
11.YSR(Int)	.54**	.73**	.35**	.28**	.24*	.35**	.54**	.55**	.36**	.32**	-		
12.YSR(Ext)	.54**	.67**	.34**	.30**	.44**	.48**	.62**	.51**	.55**	.55**	.58**	-	
13.YSR(Total)	.60**	.78**	.44**	.34**	.33**	.42**	.64**	.43**	.46**	.35**	.90**	.81**	-

*p < .05
**p < .01

Table 5.

Correlations between measures (Urban Sample).

Males above the diagonal; females below:

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. CAPS	-	.72**	.62**	-.17	.32	.11	.26	.13	.16	.06	.68**	.65**	.71**
2. IHSSRLE	.48**	-	.41*	.09	.54**	.28	.45**	.28	.29	.24	.66**	.72**	.79**
3 LEQ(Neg)	.35*	.47**	-	-.16	.19	-.08	.11	-.04	-.08	-.07	.44**	.34*	.42**
4. LEQ(Neu)	-.24	.20	-.02	-	-.16	-.10	-.08	-.11	-.07	-.13	-.04	.14	.05
5. LEQ(Pos)	.26	.28	.41**	-.26	-	.53**	.60**	.57**	.49**	.52**	.29	.47**	.43**
6. WOC(Appr)	.29*	.58**	.27	.33*	.38*	-	.74**	.97**	.96**	.97**	.28	.27	.34*
7. WOC(Avoid)	.44**	.73**	.45**	.28	.22	.66**	-	.86**	.71**	.72**	.49**	.57**	.60**
8. WOC(Total)	.36*	.65**	.39**	.30	.35*	.96**	.81**	-	.94**	.94**	.33*	.37*	.41**
9. WOC(Prob-Foc)	.29	.63**	.35*	.34*	.35*	.93**	.73**	.92**	-	.87**	.30**	.31	.37*
10.WOC(Emo-Foc)	.27	.46**	.17	.28	.36*	.95**	.52**	.88**	.77**	-	.23	.22	.27
11.YSR(Int)	.50**	.67**	.33*	.34	.09	.47**	.58**	.52**	.46**	.42**	-	.71**	.88**
12.YSR(Ext)	.20	.49**	.60**	.44	.14	.39**	.54**	.46**	.49**	.25	.51**	-	.89**
13.YSR(Total)	.48**	.73**	.54**	.44	.20	.54**	.67**	.61**	.56**	.46**	.88**	.80**	-

Pooled:

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. CAPS	-												
2. ISSHRLE	.58**	-											
3. LEQ(Neg)	.48**	.41**	-										
4. LEQ(Neu)	-.22*	.16	-.07	-									
5. LEQ(Pos)	.31**	.41**	.24*	-.22*	-								
6. WOC(Appr)	.13	.38**	.04	.13	.43**	-							
7. WOC(Avoid)	.26*	.55**	.22*	.13	.42**	.71**	-						
8. WOC(Total)	.13	.40**	.10	.11	.44**	.97**	.84**	-					
9. WOC(Prob-Foc)	.19	.42**	.07	.15	.41**	.95**	.72**	.92**	-				
10.WOC(Emo-Foc)	.19	.42**	.07	.15	.41**	.95**	.72**	.92**	.81**	-			
11.YSR(Int)	.55**	.66**	.40**	.16	.21*	.35**	.53**	.40**	.37**	.31**	-		
12.YSR(Ext)	.53**	.60**	.41**	.27*	.36**	.25*	.48**	.32**	.34**	.42**	.58**	-	
13.YSR(Total)	.63**	.75**	.45**	.24*	.36**	.38**	.59**	.43**	.42**	.29**	.86**	.85**	-

*$p < .05$
**$p < .01$

Table 6.

Correlations between measures (Pooled Sample).

Males above the diagonal; females below:

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. CAPS	-	.75**	.56**	-.02	.38**	.26*	.38**	.31**	.31**	.20	.60**	.67**	.68**
2. IHSSRLE	.57**	-	.44**	.17	.50**	.41**	.52**	.43**	.44**	.35**	.68**	.72**	.78**
3. LEQ(Neg)	.40**	.47**	-	-.04	.21*	.03	.19	.06	.05	.01	.43**	.34**	.47**
4. LEQ(Neu)	-.09	.22	-.01	-	-.08	-.03	.04	-.04	-.01	-.04	.10	.24*	.19
5. LEQ(Pos)	.23*	.29**	.25*	-.15	-	.45**	.42**	.45**	.44**	.42**	.28**	.47**	.42**
6. WOC(Appr)	.33**	.54**	.31**	.27*	.45**	-	.73**	.97**	.96**	.96**	.29**	.32**	.34**
7. WOC(Avoid)	.49**	.71**	.44**	.27*	.26*	.70**	-	.85**	.73**	.68*	.46**	.55**	.56**
8. WOC(Total)	.38**	.63**	.37**	.27**	.38**	.97**	.83**	-	.94**	.93**	.30**	.39**	.37**
9. WOC(Prob-Foc)	.28**	.56**	.35**	.30**	.48**	.94**	.72**	.92**	-	.85**	.33**	.40**	.41**
10. WOC(Emo-Reg)	.34**	.47**	.24*	.22*	.38**	.96**	.63**	.91**	.80**	-	.23*	.40**	.41**
11. YSR(Int)	.54**	.72**	.29**	.31**	.16	.44**	.61**	.49**	.41**	.42**	-	.65**	.88**
12. YSR(Ext)	.36**	.55**	.47**	.36**	.33**	.45**	.56**	.52**	.51**	.35**	.52**	-	.88**
13. YSR(Total)	.57**	.76**	.43**	.39**	.29**	.51**	.68**	.59**	.51**	.47**	.90**	.79**	-

Pooled:

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. CAPS	-												
2. ISSHRLE	.59**	-											
3. LEQ(Neg)	.43**	.41**	-										
4. LEQ(Neu)	-.01	.19**	-.02	-									
5. LEQ(Pos)	.29**	.34**	.23**	-.15*	-								
6. WOC(Appr)	.24**	.41**	.15*	.12	.41**	-							
7. WOC(Avoid)	.35**	.57**	.27**	.12	.32**	.69**	-						
8. WOC(Total)	.27**	.47**	.19**	.10	.39**	.97**	.83**	-					
9. WOC(Prob-Foc)	.28**	.63**	.35*	.34*	.35*	.93**	.73**	.92**					
10. WOC(Emo-Foc)	19**	.36**	.13	.08	.37**	.96**	.63**	.92**	.81**	-			
11. YSR(Int)	.55**	.70**	.38**	.21**	.23**	.36**	.53**	.38**	.81**	.32**	-		
12. YSR(Ext)	.55**	.64**	.38**	.29**	.41**	.36**	.54**	.42**	.44**	.26**	.59**	-	
13. YSR(Total)	.64**	.77**	.44**	.28**	.37**	.40**	.60**	.44**	.45**	.33**	.88**	.83**	-

*$p < .05$
**$p < .01$

on the YSR; however, relationships between neutral and positive event scores on the LEQ and YSR scores were inconsistent (see Table 5). Similarly, in the pooled sample, positive events were not significantly correlated with internalizing problems in females, and neutral events were not significantly correlated with internalizing problems and total problems in males (see Table 6). This indicates that males and females may react differently to life events. However CAPS and IHSSRLE were directly related with YSR scores in males and females in both rural and urban samples.

Positive correlations between stress measures and the YSR were generally higher among females. More correlations between LEQ scores and the YSR were significant among females, however more correlations between CAPS scores and the YSR were significant among males. There was also evidence for gender-specific reactions to conflict-related stress, whereby CAPS-YSR (internalizing problems) correlations were significant among females but not males. Conversely, CAPS-YSR (externalizing problems) were significant among males but not females. Among females, neutral events scores on the LEQ correlated with internalizing problems, externalizing problems, and total problem scores on the YSR (see Table 6). In males, however, neutral events correlated with externalizing problems, and

not internalizing problems or total problem scores.

In comparisons of correlations between the YSR and each of the stress measures, some sex differences emerged. To compare males and females and rural and urban participants in correlations between measures, a series of *r* to *z* transformations were used (Edwards, 1965). Correlations between the neutral events scored on the LEQ and total problem scores on the YSR were somewhat stronger for females than it was for males ($z = 1.49$, $p = .06$). Consistent with above evidence of gender-specific reactions to conflict-related stress, the relationship between externalizing problems and the CAPS was stronger for males ($z = 2.75$, $p < .01$). The relationship between externalizing problem scores and IHSSRLE scores was also stronger for males than it was for females ($z = 1.75$, $p < .05$).

Stress and coping. Total scores on the WOC-R were significantly and positively correlated with scores on the CAPS and IHSSRLE. Relationships between the WOC-R and LEQ varied depending on the sample and type of coping involved. Among rural adolescents, problem-focussed, emotion-focussed and total coping scores correlated with negative and positive events, but not neutral events, and this varied between males and females (see Table 4). Among urban adolescents, problem-focussed, emotion-focussed and total coping scores correlated with positive events but not

negative or neutral events (this varied somewhat between males and females; see Table 5). In the pooled sample of urban and rural adolescents, problem-focussed coping correlated with all stress measures, including negative, neutral and positive life events. Many of these correlations were lower among males (see Table 6). Although emotion-focussed coping had lower correlations with CAPS and IHSSRLE scores than with LEQ scores, no differentiation was found between problem-focussed and emotion-focussed coping scores in their relationships with various stress measures.

Relationships between life events and coping responses were generally stronger among females than among males (see Table 6). However, no sex differences emerged in correlations between scores on the WOC-R (approach coping, avoidance coping, problem-focussed, emotion-focussed, and totals) and scores on either the CAPS or IHSSRLE. On the LEQ, among females, approach coping was more strongly related with negative events ($z = 1.78$, $p < .05$) and neutral events ($z = 1.87$, $p < .05$). Females also showed stronger relationships between problem-focussed coping and negative life events ($z = 2.15$, $p < .05$) and between problem-focussed coping and neutral events ($z = 2.04$, $p < .05$). Similarly, females showed stronger relationships between emotion-focussed coping and negative life events ($z = 1.65$, $p < .05$) and between emotion-focussed coping and neutral events ($z =$

1.80, $p < .05$). The number of negative events reported on the LEQ was more strongly related with total WOC-R scores in females ($r = .37$, $p < .01$) than they were in males ($r = .06$, $p > .05$; $z = 1.65$, $p < .05$). Females appeared to show closer relationships between stress from major life events and use of more emotion-focussed and problem-focussed coping strategies.

Rural adolescents showed stronger relationships between conflict and coping and between life events and coping than their urban counterparts. CAPS scores were more strongly correlated with approach coping ($z = 1.87$, $p < .05$), emotion-focussed coping ($z = 1.95$, $p < .05$), and total WOC-R scores ($z = 2.42$, $p < .05$) among rural adolescents. Negative life events were also more closely related to approach coping ($z = 1.69$, $p < .05$) and emotion-focussed coping ($z = 1.77$, $p < .05$) among rural adolescents. However, no other rural-urban differences emerged in correlations between stress measures and the WOC-R.

Moderating effects of coping. It is apparent from the correlations and regression analyses that stress is strongly related to the presence of internalizing and externalizing problem behaviours in this sample of adolescents. To examine whether coping has some intermediating role between stress and behavioural problems, a series of partial correlations were conducted. If stress had primarily

independent effects on problems, then correlations between stress and problems would be about equal to partial correlations controlling for the effects of coping. Similarly, if coping had primarily independent effects on problems, then correlations between coping and problems should be about equal to partial correlations controlling for the effects of stress. These two sets of analyses are presented in Tables 7 and 8. Because no *a priori* hypotheses were constructed about differences in these partial correlations between males and females and rural and urban participants, the data were pooled from all samples.

As seen in Table 7, no significant drops were found in partial correlations involving any of the stress measures and problem scores after the effects of coping were held constant. However, correlations between neutral and positive life events and internalizing problems were no longer significant after controlling for the effects of coping (problem-focussed, emotion-focussed, and total). Coping may be involved in moderating the relationship between life events and problems but may not be involved in moderating the effects of other types of stress. As seen in Table 8, a number of noticeable reductions in correlations between coping and stress were found after holding constant the variance in stress measures. For instance, correlations between problem-focussed coping and internalizing

Table 7

Standard and Partial Correlations Between Stress and YSR Scores.

	CAPS	IHSSRLE	LEQ (Neg)	LEQ (Neu)	LEQ (Pos)
(Standard Correlations)[a]					
Internalizing Problems	.55**	.70**	.38**	.21**	.23**
Externalizing Problems	.55**	.64**	.38**	.29**	.41**
Total Problems	.64**	.77**	.44**	.28**	.37**
(Controlling for Problem-Focussed Coping)					
Internalizing Problems	.53**	.61**	.35**	.10	.08
Externalizing Problems	.54**	.53**	.34**	.19*	.29**
Total Problems	.63**	.69**	.41**	.15*	.24**
(Controlling for Emotion-Focussed Coping)					
Internalizing Problems	.55**	.62**	.36**	.10	.11
Externalizing Problems	.56**	.58**	.34**	.22**	.37**
Total Problems	.65**	.71**	.41**	.18*	.29**
(Controlling for Total Coping)					
Internalizing Problems	.52**	.58**	.32**	.10	.05
Externalizing Problems	.53**	.52**	.32**	.21*	.30**
Total Problems	.63**	.68**	.38**	.17*	.22**

[a] Also displayed in Table 6.
*$p < .05$
**$p < .01$

Table 8

Standard and Partial Correlations Between WOC-R and YSR Scores.

	Intern. Problems	Extern. Problems	Total Problems
(Standard Correlations)[1]			
Problem-Focussed Coping	.81**	.44**	.45**
Emotion-Focussed Coping	.32**	.26**	.33**
Total Coping	.38**	.42**	.44**
(Controlling for CAPS)			
Problem-Focussed Coping	.29**	.34**	.37**
Emotion-Focussed Coping	.29**	.17*	.29**
Total Coping	.35**	.31**	.41**
(Controlling for IHSSRLE)			
Problem-Focussed Coping	.05	.23	.17**
Emotion-Focussed Coping	.11	.06	.12
Total Coping	.12	.19*	.20**
(Controlling for LEQ-Negative)			
Problem-Focussed Coping	.30**	.42**	.41**
Emotion-Focussed Coping	.28**	.23**	.30**
Total Coping	.36**	.39**	.43**
(Controlling for LEQ-Neutral)			
Problem-Focussed Coping	.32**	.42**	.41**
Emotion-Focussed Coping	.28**	.24**	.30**
Total Coping	.39**	.41**	.45**
(Controlling for LEQ-Positive)			
Problem-Focussed Coping	.26**	.31**	.31**
Emotion-Focussed Coping	.23**	.12	.20**
Total Coping	.34**	.30**	.36**

[1] Also displayed in Table 6
*$p < .05$
**$p < .01$

problems fell dramatically after scores on the CAPS, IHSSRLE and LEQ were controlled. These results show substantial shared variance between stress and coping variables.

Another method of assessing the degree to which coping moderates or "buffers" the effects of stress on coping is to use hierarchical regression analysis. In each regression model, a stress variable was first entered into the equation, followed by a coping variable, and then the interaction term (generated by multiplying the coping variable by the stress variable) followed by a constant:

$$\beta_1 x_1 + \beta_2 x_2 + \beta_3 x_1 x_2 + a = Y$$

or,

Stress + Coping + (Stress by Coping) + Constant = Outcome

To correct against multicollinarity between stress and coping variables, scores were centered around zero by subtracting them from their respective means (Aldwin, 1994; Cohen & Cohen, 1975).[2] Betas, standard errors, and standardized betas for each interaction for each stress measure, coping factor, and YSR problem score are provided in the Appendix (see Appendix B). The data were broken down by sex and rural and urban samples as a check against the

possibility that moderating effects were present in a particular group (e.g., urban males or rural females) but "washed out" by null or opposite effects in the entire sample.

Very few stress-coping interaction terms predicted a significant amount of observed variance in YSR scores. Of the 1,215 regression models tested, the stress-coping interaction term predict scores on the YSR in just 31 (2.55%) did. All 31 of these models involved life events scores; nine (29.03%) involved problem-focussed coping, six (19.35%) involved emotion-focussed and the remaining 16 (51.61%) involved total coping. Eight (25.81%) of the significant interactions were found in the rural sample, 11 (35.48%) were in the urban sample, and 12 (38.71%) were found in the pooled sample. In addition, 16 (51.61%) were found in males and just 3 (9.68%) were found in females; 12 (38.71%) were found in the pooled sample. Generally, significant interactive effects of stress and coping on problem behaviours were more prevalent among urban adolescents and males, the same group which reported more conflict and externalizing problems than any other group. These results indicate that if coping does moderate the relationship between stress and problems, it is more likely to be with life events. It is quite apparent, however, that although stress and coping are related to one another, and

both are related to problems, their cumulative effects on problems are direct and non-interactive. The results from these hierarchal regression models support the first and third theoretical models (see Figures 1 and 3).

Path Models of adolescent stress and coping.

Structural equation modeling was used to integrate and compare direct and indirect effects of stress on problems in common sets of analyses. The goal was not to construct an all-inclusive etiological model of behavioural problems, but to evaluate and compare the empirical fit of three theoretical models of stress and coping (Figures 1-3).

To determine whether to pool data from rural and urban samples and male and female participants, multiple regression analyses were conducted to determine whether sex and community size predicted a significant amount of observed variance in coping and problem scores (see Tables 9 and 10). Sex did not contribute a significant amount of amount of observed variance in problem-focussed coping (β = .01, $p > .05$) or total WOC-R scores (β = -.08, $p > .05$). However sex was a significant predictor of emotion-focussed coping (β = .17, $p < .05$). Sex also contributed a significant amount of observed variance in externalizing problem scores on the YSR (β = -.12, $p < .05$), but not internalizing problems (β = .01, $p > .05$) or total problem scores (β = -.08, $p > .05$). For clarity, various

components of coping and problems were not introduced in the structural equation models, and because sex did not contribute a significant amount of variance in total coping scores or total problem scores, data from male and female participants were pooled.

Community size was not a significant predictor of WOC-R scores; it did not contribute a significant amount of observed variance in problem-focussed coping (β = .03, $p > .05$), emotion-focussed coping (β = -.01, $p > .05$), or total WOC-R scores (β = -.09, $p > .05$). Also, community size did not contribute a significant amount of variance in internalizing problems (β = -.07, $p > .05$), externalizing problem (β = -.04, $p > .05$), or total problems (β = -.03, $p > .05$). Therefore, data from rural and urban samples were also pooled.

The maximum likelihood method of parameter estimation was used to analyze each linear structural equation model. The criterion probability value for exclusion of fixed parameters was .05. With pooled data from rural and urban samples, the ratio of sample size to the number of free parameters to be estimated were approximately 20 to 1, so the solutions should be stable if a reasonable theory is being tested (Byrne, 1994; Kline, 1991; Shen, Bentler & Comrey, 1995). Because negative, neutral and positive events scores all had similar effects on coping and

Table 9

Summary of Multiple Regression Analysis for Variables Predicting Scores on the WOC-R (N = 226)

Variable	*B*	*SE B*	β
Problem-Focussed			
CAPS	.89	.20	.30**
IHSSRLE	.21	.03	.45**
LEQ (Negative)	.39	.18	.15*
LEQ (Neutral)	.45	.18	.17*
LEQ (Positive)	1.07	.16	.41**
Sex	.13	1.36	.01
Community Size	.49	1.18	.03
Emotion-Focussed			
CAPS	.56	.21	.19**
IHSSRLE	.17	.03	.36**
LEQ (Negative)	.34	.18	.13
LEQ (Neutral)	.23	.19	.08
LEQ (Positive)	.97	.17	.37**
Sex	3.14	1.36	.17*
Community Size	-.15	1.19	-.01
Total WOC-R Scores			
CAPS	1.45	.59	.17*
IHSSRLE	.22	.05	.28**
LEQ (Negative)	-.85	.57	-.10
LEQ (Neutral)	.53	.54	.06
LEQ (Positive)	2.09	.53	.25**
Sex	2.14	1.71	-.08
Community Size	-4.96	3.61	-.09

*$p < .05$
**$p < .01$

problems, they were pooled to create one life events score. This composite life events score was used in the models. In addition, because little differentiation was found between problem-focussed and emotion-focussed coping in direct relationships with stress and problems, and in moderating effects, scores from both WOC-R factors were combined. These "approach coping" scores were used in the models.

The empirical fit of the first theoretical model was tested. It outlines direct relationships between each stress measure and problems. Coping is omitted from this model. As seen in Figure 6, stress measures were free to covary, and problems were represented as a latent variable, estimated by the three problem scores of the YSR (internalizing, externalizing and total problems). The chi-square value for this model was 7.12 (df = 2; p = .03), which indicated that the model is somewhat likely to be correct in the population. The Bentler-Bonnet normed fit index (BBNFI) was .950 and the confirmatory fit index (CFI) was .993, which indicates this model was a good fit to the data. Like the correlations found between each stress measure and problem scores (Tables 4, 5 and 6), standardized beta coefficients on pathways between stress and problems were positive and significant.

Although stress had direct effects on the prevalence of emotional and behavioural problems, there are certainly

Table 10

Summary of Multiple Regression Analysis for Variables Predicting Scores on the YSR (N = 194)

Variable	B	SE B	β
Internalizing Problems			
CAPS	1.24	.23	.39**
IHSSRLE	.08	.02	.25**
LEQ (Negative)	.27	.23	.08
LEQ (Neutral)	.55	.21	.16*
LEQ (Positive)	-.02	.21	-.01
Sex	.16	.68	.01
Community Size	-1.48	1.42	-.07
Externalizing Problems			
CAPS	1.11	.23	.34**
IHSSRLE	.07	.02	.22**
LEQ (Negative)	.24	.22	.07
LEQ (Neutral)	.90	.21	.25**
LEQ (Positive)	.58	.20	.18**
Sex	-1.36	.66	-.12*
Community Size	-.84	1.39	-.04
Total Problem Scores			
CAPS	1.32	.21	.42**
IHSSRLE	.08	.02	.25**
LEQ (Negative)	.35	.20	.11
LEQ (Neutral)	.80	.19	.23**
LEQ (Positive)	.29	.19	.09
Sex	-.90	.61	-.08
Community Size	-.56	1.27	-.03

*$p < .05$
**$p < .01$

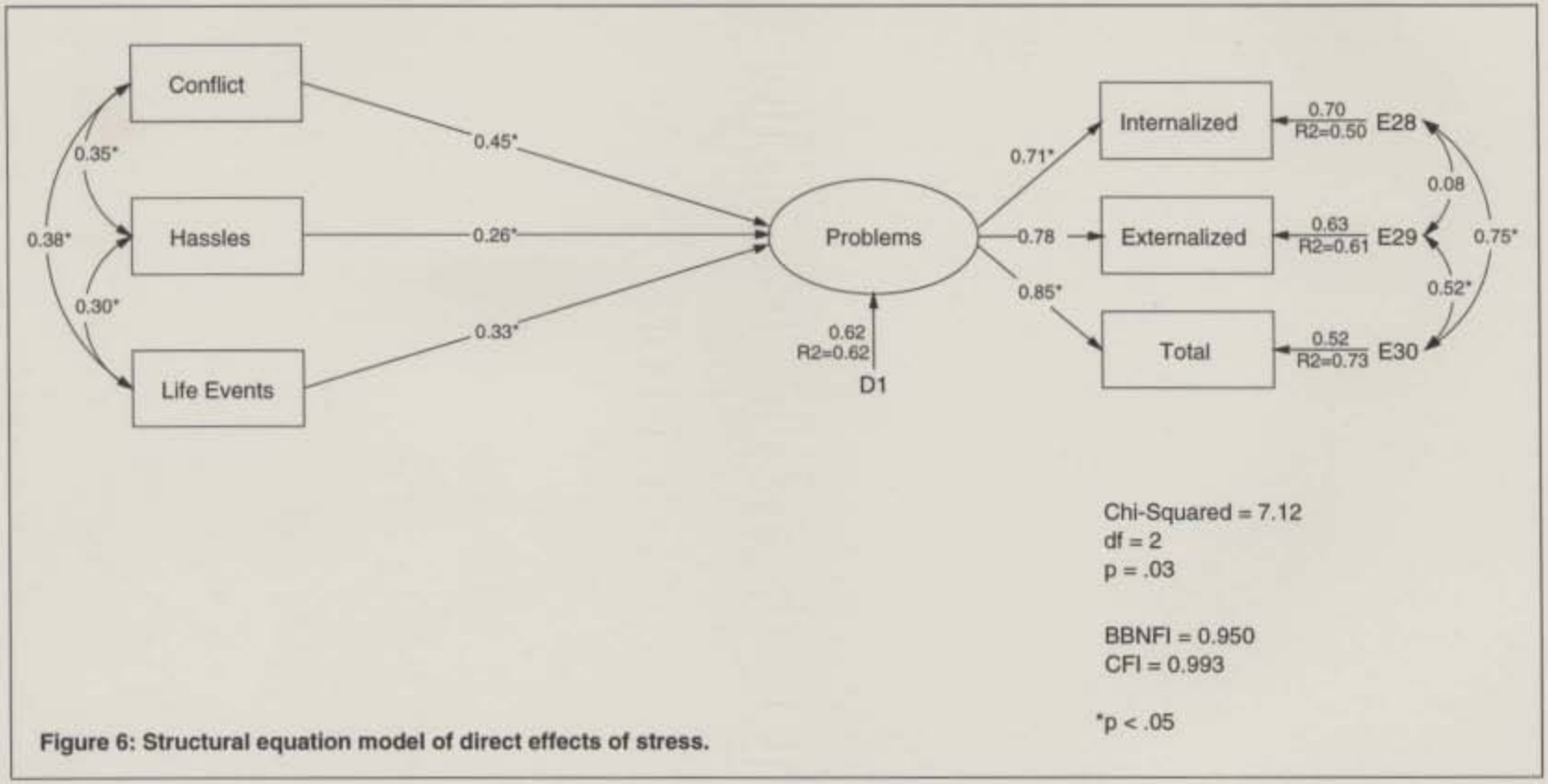

Figure 6: Structural equation model of direct effects of stress.

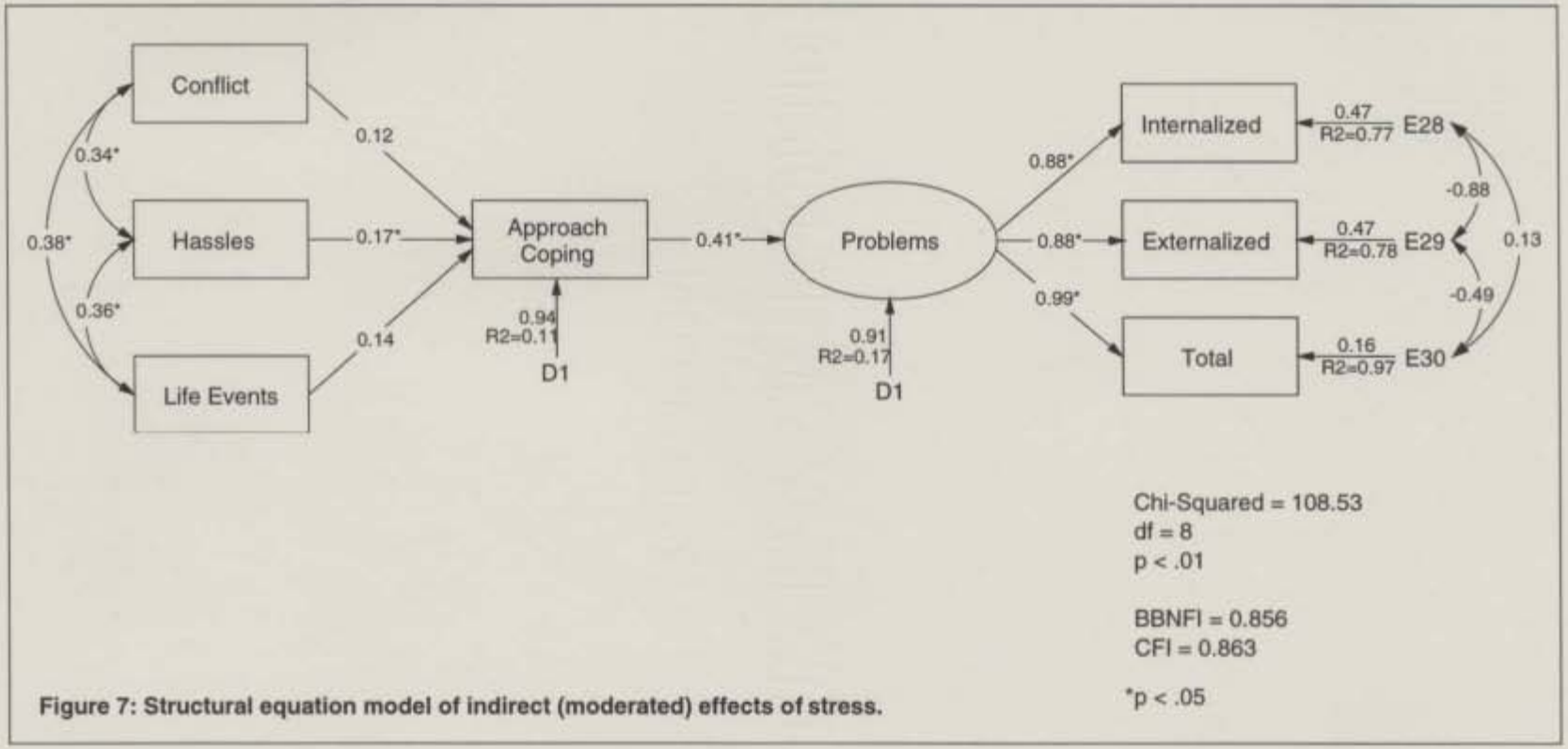

Figure 7: Structural equation model of indirect (moderated) effects of stress.

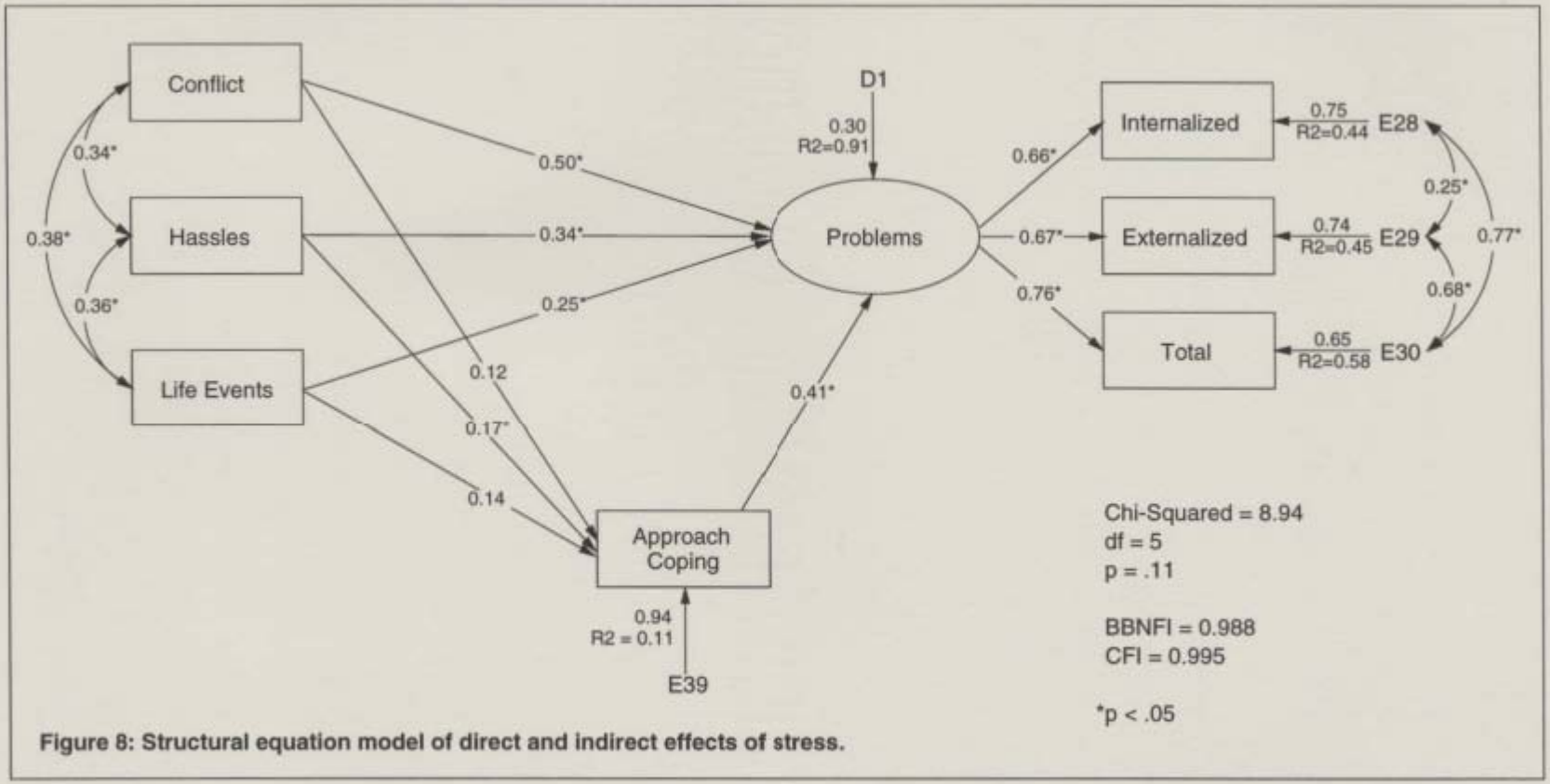

Figure 8: Structural equation model of direct and indirect effects of stress.

empirical and practical grounds to consider bidirectional relationships between these variables. As noted above, the presence of emotional and behavioural problems increases the likelihood that adolescents may experience stress (Newcomb et al., 1986), but problems are conceptualized as an "outcome variable" in the present study, and so bidirectional effects were not included in the analyses.

The second theoretical model was analyzed whereby all effects of stress on problems are mediated by coping. The chi-square value for this model was 108.53 ($\underline{df}$ = 8; $\underline{p}$ < .01) · a statistically significant increase of 101.41 ($\underline{df}$ = 5, $\underline{p}$ < .01) when compared to the first model (see Figure 7). It is unlikely that this model is correct in the population. The BBNFI was .856 and CFI was .863, which indicates this model was a poor fit to the data. Although each stress measure was found to correlate with coping, standardized beta coefficients between each stress measure and coping were low (βs = .12 to .17), and they predicted just 11% of the observed variance in coping. This resulted in a large error term associated with coping in this model, and a small amount predicted variance in problems (R^2 = .17).

As explained above, although coping and stress may not have strong interactive effects on problems, they may each have direct effects on problems. The existence of both direct and indirect effects of stress on problems is also

possible. These relationships were represented in the third theoretical model (see Figure 8). As in the previous model, the stress variables together accounted for a small amount of the observed variance in approach coping (R^2 = .11), however they did account for a large amount of observed variance in problems (R^2 = .91). Similarly, standardized beta coefficients between stress and problems were higher than for intermediating relationships between stress, coping and problems. The chi-square of this model was 8.94 (df = 5; p = .11) which indicates it is likely that this model is correct in the population. The BBNFI was .977 and CFI was .995, which indicate this model was a very good fit to the data. This model clearly indicates that stress and coping each have strong direct effects on problems, and the combination of direct and indirect effects of stress plus the direct effects of coping on problems are stronger than either direct or indirect effects of stress alone.

Summary

Urban males reported more stress from social conflict, more externalizing problem behaviours, and showed a closer relationship between conflict and externalizing problems than any other group. Females scored higher on two emotion-focussed subscales on the WOC-R, but no sex differences emerged in the total number of problem-focussed and emotion-

focussed coping strategies reported. Urban adolescents reported more life events and hassles than their rural counterparts.

Positive correlations were found between stress and problems, however relationships involving the LEQ varied among males and females and rural and urban samples. This may be due to floor effects caused by low scores and high variability in LEQ scores (see Tables 1 to 3).

Problems were more closely associated with life events in females than in males. There was also evidence of gender-specific reactions to conflict and hassles; correlations between these stressors and problems were more likely to involve internalizing problems among females and externalizing problems among males. In addition, correlations between coping and stress from conflict and life events were higher among rural adolescents.

There were no significant differences found between problem-focussed and emotion-focussed coping in their correlations with stress measures. Using hierarchical regression analyses to determine the predictive strength of the interaction between stress and coping, no evidence was found for moderating effects of coping. However, coping was found to be associated with both stress and problems, and through testing the fit of three theoretical models, it was determined that both direct and indirect effects of stress

(moderated by coping) on problems may be present. These direct and indirect effects of stress plus the direct effects of coping on problems were stronger than either direct or indirect effects of stress alone.

Discussion

Stress and coping

Strong relationships were found between self-reported stress from conflict, hassles and life events and emotional and behavioural problems scored on the YSR. Positive correlations found between reports of stress and psychological symptoms are consistent with the body of clinical observations and empirical discussed in the Introduction (e.g., Berden, 1990; Paykel, 1994). Adolescents who report more problems are those who report more stress, and vice versa. This relationship likely reflects bidirectional effects: stress affects psychological functioning, and emotional and behavioural disturbances affect the environment in such a way that predispose the individual to more life change and stress (Lazarus & Folkman, 1984; Newcomb, Huba & Bentler, 1986).

Looking at the results of the regression analyses and structural equation modelling, stress and coping both independently predicted problems, but their interactive effect on problems was not significant. Although the number of coping strategies that participants reported on the WOC-R correlated with self-reported stress and problems, coping did not moderate the effects of stress on problems. There may be a disparity between appraisal and coping processes; i.e., adolescents recognize and respond to stress with

coping behaviours, but their "ways of coping" may not be optimal or have significant impact on curbing the negative effects of stress.

It is one thing to identify an event as stressful and quite another to know what if anything can be done about it. Lazarus and Folkman (1984) make a distinction between these two processes. They describe *primary appraisal* as recognizing an event as irrelevant, benign, positive, or stressful. If deemed stressful, *secondary appraisal* takes place, which involves evaluation of what can be done to minimize adverse effects on oneself. Lazarus and Folkman (1984) describe secondary appraisal as a complex evaluative process that

> ...takes into account which coping options are available, the likelihood that a given coping option will accomplish what it is supposed to, and the likelihood that one can apply a particular strategy or set of strategies effectively (p. 35).

Primary appraisal facilitates, but does not guarantee, effective secondary appraisal. The finding that coping is related to stress and problems but does not serve a moderating function suggests adolescents perceive stress as something to be coped with, but the strategies they use do

not appear to moderate the effects of the stress. Either some incongruence exists between adolescents' primary and secondary appraisal processes, or items in the WOC-R do not include the more relevant (or effective) coping strategies for adolescents.

Group differences

Differences between rural and urban samples and between males and females should be interpreted in light of the fact that consent was received for about half of all participants approached for inclusion in the study. Consent rates (40% for the urban sample; 62.9% for the rural sample) were somewhat low and introduce the possibility of biases in the sample; the choice not to participate in the study may have been influenced by stress or psychological distress.

On the CAPS, urban males scored higher than urban females and rural males and females. Scores from the urban sample were similar to those found by Cavell & Kelly (1994) who developed the instrument with samples of urban adolescents in Texas. However, males in the rural sample scored similarly to their female counterparts - a result that corresponds with results from a previous study on rural adolescents conducted in the same communities (Elgar, 1995). Higher CAPS scores among male adolescents in urban areas indicate they experience more stress from social problem

situations than any other group.

Urban males also reported more externalized problem behaviours, even after adjusting YSR scores to account for sex differences normally seen in the instrument (Achenbach, 1991). Correlations between stress measures and externalized problem scores were also higher among urban males. The coexistence of higher levels of conflict-related stress and externalized problems among urban males suggests these constructs may affect one another. To reiterate, the existence of bidirectional effects between stress and behaviour problems is highly possible.

It is well documented that externalized behaviour problems (e.g., disorders of conduct, hyperactivity and attention) are generally more prevalent among males (Achenbach, 1991; Anderson, Williams, & Silva, 1987; Berry, Shaywitz, & Shaywitz, 1985), particularly in urban areas (Hendrin, 1991). Possible contributing factors include overcrowding and more opportunities to become introduced to deviant peer groups - a precursor to antisocial behaviour and peer rejection (Patterson, DeBaryshe, & Ramsey, 1989). In urban areas, larger class sizes may contribute to less teacher supervision, and lower unemployment rates may be associated with less parental supervision after school. Culturally derived beliefs, such as acceptance of aggression, respect for authority, role of the teacher and

parent, and the value of independence may also play a role. It is possible that conflict and acting out among adolescent males have become culturally normalized in cities in ways they have not been in rural communities.

The results supported the hypothesis that although conflict occurs less frequently, its relationship with the number of coping strategies reported is stronger among rural adolescents. CAPS scores were more strongly related to WOC-R scores among rural adolescents, indicating they are more likely to appraise conflict as stress. This may be due to smaller and more cohesive social networks in rural communities which make conflicts with peers, teachers, parents and other adults highly threatening to social relationships. If one has several circles of peers to socialize with at school, having disagreements with individuals in one group - even for extended periods of time - may not be stressful. For most rural adolescents, however, choice of peers is limited, and becoming an outcast may have a significant and long-term impact on psychological functioning.

Another interesting finding was that rural adolescents reported fewer life events (negative and positive) and hassles than urban adolescents. It appears that urban adolescents generally experience higher stress levels in all domains. For rural adolescents, environmental factors such

as outmigration and economic uncertainty are either not affecting the prevalence of behavioural problems, or rural communities have certain qualities that buffer their effects (e.g., cohesive families and communities). On the other hand, the relative *proximity of stress* has important consequences for adolescent functioning. The stress assessed in the present study, found to be closely associated with the prevalence of behavioural problems, may be considered close, or proximal, to individuals. Although certain environmental stressors are more prevalent in rural coastal communities in Newfoundland, they are more distal and less interpersonal in nature, so their immediate impact on adolescent functioning may be minimal. An appropriate follow-up to this research would be to compare the immediate and long-term effects of proximal and distal stressors in rural and urban adolescents and to further investigate resiliency in rural adolescents to distal stressors. In light of these results, a more in-depth investigation of coping is also in order, which may be better addressed using both quantitative and qualitative data from multiple sources.

Results from the pooled sample of rural and urban participants included noteworthy differences between males and females. Relationships between WOC-R and LEQ scores were generally stronger among female adolescents, and

females reported slightly more problem-focussed and emotion-focussed coping strategies than males in response to life events. This could mean female adolescents are more likely to perceive life events as something that can be coped with. However, the absence of any moderating effects of coping precludes evidence to show the efficacy of such coping.

Sex differences also existed in the relationships between stress and behavioural problems. Compared with males, females demonstrated closer associations between conflict and internalized problems and between life events and internalizing problems. It is well established that internalized behavioural problems during adolescence such as anxiety and mood disorders are more prevalent among females (Achenbach, 1991; Nolen-Hoeksema, Seligman, & Girgus, 1992; Stark, 1990). These findings are also consistent with research that has found that females, when confronted with stress, are more likely to internalize emotional reactions (Kovacs, 1985b; Beck, 1967; Block, Gjerde, & Block, 1991). Bidirectional effects may also exist here; internalized problem behaviours can have adverse effects on functioning thus increasing the likelihood of stressful events.

Methodological issues

In interpreting and evaluating the implications of

rural-urban and sex differences in the data, a number of methodological issues should be raised. Results such as the absence of moderating effects of coping are best understood with the points raised about the nature of adolescent coping. However, exploration of other contributing factors in the assessment of coping and the overall design of the present study is in order.

Assessment of coping. Although stress was found to have both direct and indirect effects on problems, the direct effects were stronger. This may be the result of the modification made to the instructions on the WOC-R. Rather than ask participants to refer to specific sources of stress in identifying commonly used coping strategies, the instructions simply asked participants to identify strategies they used in stressful situations. This was necessary to allow for comparisons with their responses from the three stress measures, but did not give participants an opportunity to refer to specific points in time or to match coping strategies with particular stressors. Although stress, coping and problems are intercorrelated, this may explain why cross-products of stress and coping scores did not predict a significant amount of variance in problem scores after the variance predicted by stress and coping variables was extracted. This also helps to explain why no differences were found in correlations between each stress

measure and problem-focussed and emotion-focussed coping.

Another factor that may have contributed to the lack of interactive effects of stress and coping is the validity of the WOC-R. Although the WOC-R has been used with adolescent samples, the measure was initially developed for adult populations. It is possible that the problem-focussed and emotion-focussed strategies described in the measure do not map onto adolescents appraisal and coping processes. The internal consistency of the WOC-R was adequate, and scores correlated with stress, but its validity with respect to adolescent coping remains uncertain.

It is also noteworthy that correlations between emotion-focussed and problem-focussed coping scales were high. Either the two coping factors are not distinct in this sample or this categorization of coping strategies is inappropriate for adolescents. The number of extracted factors has been found to change from sample to sample and from stressor to stressor (Parker & Endler, 1992).

According to the Lazarus and Folkman (1984), stability in WOC-R scores is not always desired because individuals are expected to adapt their actual coping responses to the requirements of each specific situation. A problem with the measure, as well as with other coping measures based on multiple factors, is that theoretical cross-linked relationships between types of coping are not considered.

For example, mobilizing social support is seen in the WOC-R as a distinct strategy, but it can serve a number of purposes, such as problem-solving, obtaining information, calming down, or distracting oneself (Schwarzer & Schwarzer, 1996). Carver, et al. (1989) addressed this problem by establishing separate social support factors for problem-focussed and emotion-focussed items. However, Parker and Endler (1992) argue that social support should not be conceived as a distinct coping dimension but as social resources that may be available for a number of different coping strategies.

Schwarzer and Schwarzer (1996) highlight another problem in the WOC-R. That is, the high number of extracted factors do not appear to be all of the same weight or of the same theoretical level. Some may be closer to a higher-order or general factor, accounting for a larger amount of variance, whereas others may be rather peripheral. How the eight coping subscales of the WOC-R are embedded into the initial dimension of problem-focussed and emotion-focussed functions remains undetermined, and there is no empirical evidence for such a hierarchy with confirmatory factor analysis.

Furthermore, future research using the WOC-R on adolescent samples should focus on a specific set of stressors and adjust the items of the WOC-R to a specific

context. Schwarzer and Schwarzer (1996) claim this would achieve a closer match between the stress experience and the coping statements. For example, Dunkel-Schetter, Feinstein, Taylor and Falke (1992) developed a version for cancer patients which consists of 49 WOC-R items, some slightly reworded. Data from 603 cancer patients revealed five factors (seek and use social support, cognitive escape-avoidance, distancing, focus on the positive, and behavioural escape-avoidance), which were later found to be reliable over time and settings (Stanton & Snider, 1993). To date, research on adolescents and families coping with factors such as outmigration in rural coastal communities is lacking.

Design issues. There are design issues that also affect the conclusions that may be drawn. Had larger samples of rural and urban adolescents been used, separate structural equation models could have been tested on these samples. Although community size did not predict a significant amount of statistical variance in coping or problem scores, separate models may have provided a clearer picture of how the interrelationships among stress, coping and behaviour problems vary between rural and urban adolescents. A problem with this analysis is that community size was a binary distinction. Further research conducted

in a wider range of urban areas may contribute to a better understanding of rural-urban differences in adolescent coping.

Another problem is with the definition of "urban." Although the urban area from which participants were drawn in the present study is considered large in comparison to surrounding communities, it is small compared to urban areas of central Canada and the U.S. On the other hand, had an urban sample been chosen from a larger centre outside Newfoundland, it would have been difficult to separate rural-urban differences from cultural differences. To address this, it may be useful to replicate these findings from both rural and urban samples with research conducted entirely outside Newfoundland.

Implications.

For parents and educators and health professionals who work and live with adolescents in rural and urban areas, the findings offer several practical insights into how adolescents appraise, cope with and react to stress. Adolescents respond to stress with coping strategies, but it is not clear whether these responses have any impact in curbing the effects of stress. For parents, teachers and clinicians, this highlights the role of cognitive appraisal in adolescents' ability to form linkages between stress and

effective coping responses. The ways in which adolescents evaluate coping resources and their impact on the environment can be enhanced through skill teaching and therapy.

Low student-teacher ratios in schools, after-school programs and community groups have been identified as factors that reduce the risk of conduct disorder, externalized behaviour problems, and more importantly, the development of deleterious methods of dealing with conflict. It was found that urban males are more likely to experience social conflict and to act out in response to conflict-related stress. Such behaviour problems certainly increase the likelihood that they will encounter more social problem situations. To interrupt the cycle in the development of antisocial behaviour and the attributional errors that accompany it (Dodge, 1993; Patterson et al., 1989), parents, teachers and health professionals can help young urban males recognize conflict as problem situations that have a number of possible outcomes depending on how they respond. By identifying these situations as stress (primary appraisal), is becomes possible for adolescents to critically evaluate and plan appropriate responses (secondary appraisal).

For adolescents in rural communities, these results show some resiliency to the economic stress placed on rural

areas of Newfoundland. Although unemployment, outmigration and other economic factors has had a major impact on the families who live there, these more distal stressors do not appear to lead to a higher prevalence of psychological symptoms. It is possible that rural adolescents are somewhat protected by cohesive and supportive networks among peers, family and community. Hence, in situations whereby an adolescent has well-developed networks of social support, it follows that interventions to treat behaviour problems must involve and be endorsed by their families, friends, and significant members of the community.

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Endnotes

1. This interaction was found after transforming raw scores to t-scores. There were sex differences in raw scores in internalizing problems, $F(1, 192) = 4.73$, $p < .05$, and externalizing problems, $F(1, 192) = 8.72$, $p < .01$. However, such effects are common in YSR scores and have led to different cut-off scores for males and females. This provides a more accurate assessment of behaviours that may be in the "clinical range" (Achenbach, 1991).

2. Multicollinarity results when variables being multiplied to generate the interaction term are correlated, as stress and coping measures often are (Aldwin, 1994). This can result in "bouncing betas," in which the direction of the β term can shift depending on which variables are in the equation (Cohen & Cohen, 1975). Centering scores on each variable from means reduces this statistical artifact by reducing correlations between measures.

3. Like sex, community size was entered as a binary variable (i.e., rural or urban).

Appendix A. Family consent form and cover letter

Dear Parent or Guardian:

I am a graduate student studying psychology at Memorial University and I am conducting this study to investigate the relationships between stress, coping styles and mental health outcomes in adolescents. I am requesting your consent to include your child as a participant in the study.

Participants will be asked to complete FIVE scales: (1) Life Events Questionnaire, (2) Inventory of High School Students' Recent Life Experiences, (3) Checklist of Adolescent Problem Situations, (4) Ways of Coping Scale, and (5) Child Behaviour Checklist. Assessments will take place in the school (during class time) in early February, 1997.

All information gathered will be kept in strict confidentiality and all participants will remain anonymous to me at all times. Any papers arising from this study will present not individual results, but only general findings from groups of participants. If you wish to do so, you may give me your mailing address in the allotted space on the consent form so I may send you information about the results.

If you have any questions, you may contact me at the Department of Psychology of Memorial University (737-8496), my research supervisor, Dr. Christine Arlett
(737-7676), or the Psychology Department Head, Dr. John Evans (737-8495).

Please understand that agreeing to give consent to your child's participation is entirely of your own free will and your child may withdraw from the study at any time.

Sincerely,

Frank Elgar

Rural-Urban Differences in Stress, Coping and Behavioural Problems in Adolescents

Family Consent Form
(to be completed by a parent or guardian)

As the parent/guardian of a participant in this study:

- I have been provided with a cover letter that describes the purpose of the study and outlines what my child will be asked to do.

- I have a list of names and phone numbers of persons I may contact if I have questions or concerns about it.

- I understand that my child's data will be anonymous and kept confidential.

- I understand that denying consent will not cause any unfavourable attention for my child; children who do not participate will have classes as usual.

Please send information about this research to this address:

_____

_____

_____

_____

I DO grant permission for my child to participate in this study.

_____	_____	_____
Print your name	Signature of Parent/Guardian	Date

I DO NOT grant permission for my child to participate in this study.

_____	_____	_____
Print your name	Signature of Parent/Guardian	Date

Child's Consent
(to be completed by the participant)

As a participant in this study:
- I agree to complete these questionnaires at my school during class time: (1) the Life Events Questionnaire, (2) the Inventory of High School Students' Recent Life Experiences, (3) the Checklist of Adolescent Problem Situations, (4) the Ways of Coping Checklist, and (5) the Child Behaviour Checklist.
- I understand that these scales will ask me questions about the kinds of stress I have, how I cope with stress, and how I am feeling (e.g., sad, angry).
- I understand I will complete these scales when an investigator visits my school in early February, 1998.
- I understand that I WILL NOT write my name on any of these measures, so all my responses will remain anonymous and confidential at all times.

I DO agree to participate in this study

_____	_____	_____
Print your name	Signature of Participant	Date

I DO NOT agree to participate in this study

_____	_____	_____
Print your name	Signature of Participant	Date

Appendix B. Summary of hierarchical regression analyses involving cross products of stress and coping scores in predicting problem scores on the YSR.

Table B-1

Summary of Hierarchical Regression Analysis on Moderating Effects of Problem-Focussed Coping on Internalizing Problem Scores on the YSR (N = 194).

	Rural			Urban			Pooled		
	B	SE B	β	B	SE B	β	B	SE B	β
Males									
CAPS	.02	.05	.06	.00	.03	-.02	.00	.02	.01
IHSSRLE	.01	.01	.08	-.01	.01	-.04	.00	.00	.01
LEQ (Negative)	.09	.09	.16	-.03	.03	-.19	-.01	.02	-.04
LEQ (Neutral)	.00	.08	.01	-.16	.14	-.22	-.05	.08	-.08
LEQ (Positive)	.01	.07	.03	.10	.04	.57*	.08	.03	.36*
Females									
CAPS	.03	.08	.06	.01	.06	.04	.01	.04	.03
IHSSRLE	.01	.01	.12	.00	.01	.04	.00	.00	.03
LEQ (Negative)	.00	.07	.00	.00	.06	.01	.00	.04	.00
LEQ (Neutral)	.00	.08	.00	.01	.03	.10	.00	.02	-.03
LEQ (Positive)	.11	.09	.22	-.01	.05	-.04	.02	.05	.06
Total									
CAPS	.01	.04	.03	-.02	.02	-.08	.00	.02	-.02
IHSSRLE	.00	.01	.06	.00	.00	-.02	.00	.00	.01
LEQ (Negative)	.05	.05	.09	-.03	.02	-.27	-.02	.02	-.07
LEQ (Neutral)	.00	.06	.01	.02	.03	.12	.00	.02	.01
LEQ (Positive)	.04	.05	.10	.07	.03	.35*	.06	.02	.23*

*$p < .05$
**$p < .01$

Table B-2

Summary of Hierarchical Regression Analysis on Moderating Effects of Problem-Focussed Coping on Externalizing Problem Scores on the YSR (N = 194).

	Rural			Urban			Pooled		
	B	SE B	β	B	SE B	β	B	SE B	β
Males									
CAPS	.04	.05	.14	.02	.03	.10	.01	.02	.07
IHSSRLE	.01	.01	.16	.00	.00	.01	.00	.00	.17
LEQ (Negative)	.17	.08	.28*	-.02	.03	-.12	-.01	.03	-.04
LEQ (Neutral)	.02	.07	.03	-.19	.13	-.27	-.07	.07	-.12
LEQ (Positive)	.11	.06	.29*	.05	.04	.31	.05	.03	.23
Females									
CAPS	.08	.07	.18	-.02	.07	-.05	-.01	.05	-.02
IHSSRLE	.01	.01	.13	-.01	.01	-.15	.00	.01	-.08
LEQ (Negative)	-.06	.06	-.11	-.06	.06	-.15	-.03	.04	-.08
LEQ (Neutral)	.06	.07	.11	-.02	.03	-.23	-.01	.02	-.04
LEQ (Positive)	.15	.07	.29*	-.05	.06	-.14	.01	.05	.01
Total									
CAPS	.03	.04	.10	.00	.02	-.02	.00	.02	.00
IHSSRLE	.01	.01	.13	.00	.00	-.05	.00	.00	-.01
LEQ (Negative)	.03	.04	.05	-.01	.02	-.06	-.01	.02	-.05
LEQ (Neutral)	.05	.05	.09	-.01	.03	-.11	-.02	.02	-.09
LEQ (Positive)	.12	.04	.28*	.04	.03	.17	.04	.02	.15

*$p < .05$
**$p < .01$

Table B-3

Summary of Hierarchical Regression Analysis on Moderating Effects of Problem-Focussed Coping on Total Problem Scores on the YSR (N = 194).

	Rural			Urban			Pooled		
	B	SE B	β	B	SE B	β	B	SE B	β
Males									
CAPS	.05	.05	.16	-.01	.02	-.07	.00	.02	.01
IHSSRLE	.01	.01	.14	.00	.00	-.11	.00	.00	-.04
LEQ (Negative)	.14	.08	.23	-.04	.03	-.26	.01	.02	-.05
LEQ (Neutral)	.05	.08	.09	-.11	.13	-.16	-.01	.07	-.02
LEQ (Positive)	.08	.07	.20	.07	.04	.40	.06	.03	.27*
Females									
CAPS	.03	.06	.07	.01	.06	.02	.00	.04	.00
IHSSRLE	.01	.01	.08	.00	.01	-.07	.00	.00	-.03
LEQ (Negative)	-.04	.06	-.09	-.02	.05	-.05	-.02	.04	-.05
LEQ (Neutral)	.01	.07	.03	-.01	.03	-.10	-.01	.02	-.07
LEQ (Positive)	.12	.08	.25	-.04	.05	-.12	.01	.04	.03
Total									
CAPS	.03	.03	.08	-.02	.02	-.10	-.01	.02	-.02
IHSSRLE	.01	.01	.08	.00	.00	-.10	.00	.00	-.03
LEQ (Negative)	.04	.05	.07	-.03	.02	-.18	-.02	.02	-.08
LEQ (Neutral)	.03	.05	.06	.01	.03	.04	-.01	.02	-.03
LEQ (Positive)	.09	.05	.21	.04	.03	.21	.05	.02	.18*

*$p < .05$
**$p < .01$

Table B-4

Summary of Hierarchical Regression Analysis on Moderating Effects of Emotion-Focussed Coping on Internalizing Problem Scores on the YSR (N = 194).

	Rural			Urban			Pooled		
	B	SE B	β	B	SE B	β	B	SE B	β
Males									
CAPS	.06	.06	.15	.00	.03	-.02	.01	.03	.02
IHSSRLE	.00	.01	.05	.00	.01	-.09	.03	.01	-.04
LEQ (Negative)	.09	.09	.16	-.04	.03	-.29	-.01	.02	-.07
LEQ (Neutral)	.02	.10	.03	-.12	.14	-.27	.00	.07	.00
LEQ (Positive)	.04	.08	.10	.10	.04	.34*	.08	.03	.25*
Females									
CAPS	.00	.06	-.01	-.02	.07	-.05	-.02	.04	-.04
IHSSRLE	.01	.01	.19	-.01	.01	-.10	.00	.01	-.02
LEQ (Negative)	.03	.07	.07	.01	.06	.02	.01	.04	.03
LEQ (Neutral)	.10	.07	.22	.03	.04	.24	.02	.03	.08
LEQ (Positive)	.08	.11	.13	-.05	.05	-.13	-.02	.06	-.04
Total									
CAPS	.03	.04	.07	-.02	.02	-.09	.00	.02	-.02
IHSSRLE	.01	.01	.10	-.01	.00	-.11	.00	.00	-.04
LEQ (Negative)	.05	.05	.09	-.03	.02	-.20	-.02	.02	-.08
LEQ (Neutral)	.07	.06	.14	.03	.03	.12	.02	.02	.06
LEQ (Positive)	.06	.06	.11	.05	.03	.17	.05	.03	.14

*$p < .05$
**$p < .01$

Table B-5

Summary of Hierarchical Regression Analysis on Moderating Effects of Emotion-Focussed Coping on Externalizing Problem Scores on the YSR (N = 194).

	Rural			Urban			Pooled		
	B	SE B	β	B	SE B	β	B	SE B	β
Males									
CAPS	.09	.06	.24	.03	.03	.16	.03	.02	.14
IHSSRLE	.00	.01	.06	.00	.01	.03	.00	.01	.03
LEQ (Negative)	.18	.09	.32*	-.03	.03	-.20	.00	.03	-.01
LEQ (Neutral)	.04	.09	.07	-.13	.12	-.29	-.05	.07	-.09
LEQ (Positive)	.17	.07	.37*	.05	.04	.19	.07	.03	.19
Females									
CAPS	.02	.06	.04	-.06	.08	-.13	-.03	.05	-.07
IHSSRLE	.00	.01	.06	-.01	.01	-.15	.01	.01	-.10
LEQ (Negative)	.00	.06	.00	-.01	.06	-.03	.01	.04	.03
LEQ (Neutral)	.07	.07	.14	-.02	.04	-.11	-.01	.03	-.04
LEQ (Positive)	.06	.09	.11	-.10	.06	-.24	-.06	.05	-.14
Total									
CAPS	.05	.04	.14	.00	.03	-.01	.01	.02	.02
IHSSRLE	.00	.01	.06	.00	.01	-.06	.00	.00	.05
LEQ (Negative)	.06	.05	.12	.00	.02	-.01	.00	.02	.01
LEQ (Neutral)	.06	.05	.11	-.01	.03	-.07	-.02	.02	-.07
LEQ (Positive)	.13	.05	.26*	.02	.03	.05	.03	.03	.08

*$p < .05$
**$p < .01$

Table B-6

Summary of Hierarchical Regression Analysis on Moderating Effects of Emotion-Focussed Coping on Total Problem Scores on the YSR (N = 194).

	Rural			Urban			Pooled		
	B	SE B	β	B	SE B	β	B	SE B	β
Males									
CAPS	.10	.06	.26	-.01	.03	-.04	.01	.02	.06
IHSSRLE	.00	.01	.05	-.01	.01	-.12	.00	.00	-.05
LEQ (Negative)	.15	.08	.24	-.05	.03	-.37	-.01	.02	-.05
LEQ (Neutral)	.07	.10	.11	-.06	.13	-.12	.02	.07	.04
LEQ (Positive)	.13	.08	.27	.06	.04	.23	.07	.03	.21*
Females									
CAPS	-.01	.05	-.02	-.04	.06	-.07	-.02	.04	-.06
IHSSRLE	.00	.01	.06	-.01	.01	-.14	.00	.00	-.07
LEQ (Negative)	-.01	.06	-.02	-.01	.05	-.02	.00	.04	.00
LEQ (Neutral)	.08	.07	.16	.01	.04	.05	.00	.03	-.01
LEQ (Positive)	.06	.09	.11	-.08	.05	-.20	-.06	.05	-.09
Total									
CAPS	.05	.04	.12	-.02	.02	-.09	.00	.02	-.01
IHSSRLE	.00	.01	.05	-.01	.00	-.14	.00	.00	-.03
LEQ (Negative)	.04	.05	.08	-.03	.02	-.17	-.02	.02	-.07
LEQ (Neutral)	.07	.06	.14	.01	.03	.05	.00	.02	.01
LEQ (Positive)	.11	.06	.20	.02	.03	.08	.04	.03	.10

*$p < .05$
**$p < .01$

Table B-7

Summary of Hierarchical Regression Analysis on Moderating Effects of Total Coping on Internalizing Problem Scores on the YSR (N = 194).

	Rural			Urban			Pooled		
	B	SE B	β	B	SE B	β	B	SE B	β
Males									
CAPS	.01	.02	.10	-.01	.01	-.09	.01	.01	.09
IHSSRLE	.00	.00	.13	.00	.00	-.08	.00	.00	.13
LEQ (Negative)	.03	.02	.16	-.02	.01	-.38	.02	.02	.10
LEQ (Neutral)	.00	.02	-.01	-.02	.04	-.14	.01	.02	.03
LEQ (Positive)	.00	.02	-.01	.04	.01	.53**	.01	.01	.07
Females									
CAPS	.01	.02	.10	.00	.02	.02	-.01	.01	-.11
IHSSRLE	.00	.00	.18	.00	.00	-.10	.00	.00	-.10
LEQ (Negative)	.01	.02	.09	.00	.02	-.03	-.02	.01	-.29*
LEQ (Neutral)	.01	.02	.07	.00	.01	.11	.00	.01	.07
LEQ (Positive)	.02	.02	.16	-.01	.02	-.14	.03	.01	.30**
Total									
CAPS	.01	.01	.09	-.01	.01	-.11	.00	.01	-.02
IHSSRLE	.00	.00	.13	.00	.00	-.10	.00	.00	-.01
LEQ (Negative)	.02	.02	.10	-.02	.01	-.29*	-.01	.01	-.11
LEQ (Neutral)	.01	.02	.03	.00	.01	.07	.00	.01	.02
LEQ (Positive)	.01	.01	.07	.03	.01	.30**	.02	.01	.18*

*$p < .05$
**$p < .01$

Table B-8

Summary of Hierarchical Regression Analysis on Moderating Effects of Total Coping on Externalizing Problem Scores on the YSR (N = 194).

	Rural			Urban			Pooled		
	B	SE B	β	B	SE B	β	B	SE B	β
Males									
CAPS	.02	.01	.18	.00	.01	.08	.01	.01	.10
IHSSRLE	.00	.00	.12	.00	.00	.05	.00	.00	.03
LEQ (Negative)	.04	.02	.25	-.01	.01	-.29	.00	.01	-.09
LEQ (Neutral)	.01	.02	.01	-.04	.04	-.22	-.01	.02	-.08
LEQ (Positive)	.03	.02	.18	.03	.01	.37*	.03	.01	.27**
Females									
CAPS	.02	.02	.18	-.01	.02	-.04	.00	.01	.03
IHSSRLE	.00	.00	.17	.00	.00	-.11	.00	.00	-.03
LEQ (Negative)	.00	.02	-.01	-.02	.01	-.15	-.01	.01	-.04
LEQ (Neutral)	.03	.02	.18	-.01	.01	-.14	.00	.01	.03
LEQ (Positive)	.02	.02	.16	-.02	.02	-.17	.00	.01	-.03
Total									
CAPS	.02	.01	.15	.00	.01	-.03	.00	.01	.01
IHSSRLE	.00	.00	.16	.00	.00	-.05	.00	.00	-.01
LEQ (Negative)	.01	.01	.09	-.01	.01	-.12	-.01	.01	-.07
LEQ (Neutral)	.02	.01	.11	-.00	.01	-.08	.00	.01	-.06
LEQ (Positive)	.02	.01	.18*	.02	.01	.19	.02	.01	.15*

*$p < .05$
**$p < .01$

Table B-9

Summary of Hierarchical Regression Analysis on Moderating Effects of Total Coping on Total Problem Scores on the YSR (N = 194).

	Rural			Urban			Pooled		
	B	SE B	β	B	SE B	β	B	SE B	β
Males									
CAPS	.02	.02	.19	-.01	.01	-.12	.00	.01	.02
IHSSRLE	.00	.00	.16	.00	.00	-.11	.00	.00	-.04
LEQ (Negative)	.04	.02	.21	-.02	.01	-.46*	-.01	.01	-.10
LEQ (Neutral)	.01	.02	.04	-.01	.04	-.06	.00	.02	.01
LEQ (Positive)	.02	.02	.13	.03	.01	.42*	.03	.01	.28**
Females									
CAPS	.01	.02	.11	.00	.02	.01	.00	.01	.04
IHSSRLE	.00	.00	.13	.00	.00	-.14	.00	.00	-.04
LEQ (Negative)	.00	.02	.02	-.01	.02	-.08	.00	.01	.00
LEQ (Neutral)	.01	.02	.09	.00	.01	-.07	.00	.01	-.02
LEQ (Positive)	.02	.02	.18	-.02	.01	-.19	.00	.01	-.02
Total									
CAPS	.02	.01	.14	-.01	.01	-.12	.00	.00	-.01
IHSSRLE	.09	.00	.14	.00	.00	-.14	.00	.00	-.04
LEQ (Negative)	.01	.01	.07	-.01	.01	-.27*	-.01	.01	-.11
LEQ (Neutral)	.02	.02	.06	.00	.01	.00	.00	.01	-.03
LEQ (Positive)	.02	.01	.14	.02	.01	.22*	.02	.01	.17*

*$p < .05$
**$p < .01$